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EDITORIAL NOTES

THE GAS INDUSTRY AND EXPORT TRADE

FOR reasons which have been thoroughly publicized and are consequently well understood in broad outline, the maintenance and increase of export trade have never been so vital as to-day to the very existence of our State and people. The Gas Industry, apart from coke, does not usually regard itself as having any considerable scope for export, and the majority of our readers may at first sight be inclined to pay little regard to a statement on the subject which appears at the beginning of our news columns this week. It is, however, a statement of prime importance, and we would call special attention to it. It is, in fact, an announcement that plans are already well forward for the Industry to take whatever part it can in the national export drive which is recognized to be one of the most urgent tasks of traders in the circumstances of to-day.

On March 5 the President of the Board of Trade presented to Parliament a White Paper setting out the aims and plan of work of the Export Council. Even the existence of such a body may have escaped the attention of those who considered they were not directly interested, but the Council's job, briefly explained, is to ensure that every agency concerned, whether Government Department, manufacturer, or exporter, makes every effort to promote the greatest volume of export trade which can be achieved under the conditions of war. Formed to act, therefore, in an advisory, co-ordinating, and organizing capacity, the Council from the first regarded it as vital that there should be Export Committees or Groups in individual industries with whom they could deal. A meeting of existing trade organizations was convened for March 19 which included the Society of British Gas Industries, and with such energy has the Society tackled the situation that on May 3 they were able to make the announcement which adds our Industry to the list of at all events potential exporters of finished goods. And the situation, be it noted, was one that was unusually complicated by reason of the diversity of the interests concerned, and the fact that export is almost entirely a new line of business to our Industry.

The Gas Industry has cause to be very satisfied that its trading organization was thus qualified and ready to produce and father a scheme when the call came, though the last thing the Society would wish would be for the organization to be regarded as an S.B.G.I. preserve. It was laid down in the White Paper that affiliation to Export Groups must be open to all on equal terms. It is, therefore, pertinent to note that the Chairmanship of two new Sub-Groups for which registration is to be asked actually goes outside the ranks of the Society; Mr. R. B. Potter, for the Gas and Coke Making Equipment Sub-Group, being Chairman of Messrs. Simon Carves, Ltd., and Colonel W. R. Glover, for the Meter Makers, Managing Director of Messrs. Thomas Glover & Co., Ltd.

We feel sure that any firm which is interested will answer the appeal to communicate with the Secretary of the Gas and Coke Oven Industries Export Group. And, beyond the great national cause which must be paramount, there are other cogent reasons for not holding back. A fortnight ago we described the present position as regards iron and steel supplies for domestic requirements, and the procedure for obtaining them. But we made it quite clear that there are other demands upon available supplies, and we have not the least doubt that, besides the services, export trade will have its needs most carefully tended by the powers that be. The Export Council, we see, made it clear to the Industry's representatives that the first and essential need is that the Council shall know of raw material requirements for export trade, which we can take as a clear indication of the only channel through which such supplies are likely to be obtainable. May we not, too, be optimistic enough to look ahead to the time when war is no more, remembering how much British export trade was lost in 1914-18 to neutral countries? The country must lose no opportunity of developing overseas markets for future happier days quite apart from present dire necessities, and who knows but that permanent usefulness might not result to our Industry from any effort it may make at this stage? In any case we can assure the Export Council that the Gas and Coke Oven Industries will approach the problem from the immediate standpoint that the maintenance of export trade is so vital a factor in the war effort of the Allied Powers that no measure calculated to contribute to the end in view must be excluded from consideration. The vigorous start which has been made with the necessary spade-work is an earnest of the determination with which the problem will be handled.

YET ANOTHER APPEAL

AT the beginning of the war we frequently heard that what was wanted was a lead from the Government on the matter of benzole and toluole recovery, though it appeared to us that such a lead was hardly necessary in view of national requirements for essential raw materials for the manufacture not only of high explosives, but of plastics, vat dyes, disinfectants, and a host of other products. In November last, as far as toluole was concerned, a definite and unmistakable lead was forthcoming from the Minister of Supply, who stated categorically that it was essential to the life of the community that the maximum possible amount of toluole should be available for the manufacture of high explosives. At the time we urged very strongly that gas undertakings throughout the land should install benzole recovery plant and where possible tie up the process with the reduction of organic sulphur compounds in the gas supplied to the district. We put forward the view that those gas undertakings not operating benzole recovery should go ahead with installation of plant irrespective of Government assistance, and we have seen no good reason to waver from this view. We went so far as to say that discussion centred on a possible slight increase in some cases on the cost of the gaseous therm due to benzole recovery was utterly unworthy.

Some little time ago, as recorded in the "JOURNAL," the Minister of Mines appointed a number of Committees to report on the ways and means of securing the most effective use of home-produced fuels during the war. One of the Committees, under the Chairmanship of Mr. J. Davidson Pratt, was asked to report on the possibility of increasing the amount of liquid products obtained by high temperature carbonization at gas-works and coke ovens. That Committee first gave consideration to the possibilities of increasing the amount of benzole recovered. It has reported on the matter, the report has been accepted by the Government, and Mr. Geoffrey Lloyd has made it abundantly clear that the maximum production of benzole of all qualities is urgently required in the national interest. He has, in fact, issued an appeal to all authorized gas undertakings in Britain to mobilize all their resources in the production of home-produced substitutes for imported fuels.

The report of the Committee is not being published because it contains confidential information which might be of value to the enemy. It shows what has been done to increase the quantity of benzole recovered. It is estimated that 15 million more gallons of crude benzole will be recovered in 1940 compared with 1938. But—and here is the point we would emphasize—the Committee has come to the conclusion that a further quantity of crude benzole amounting to some 12 million gallons could reasonably be recovered by (*a*) the installation of recovery plants at those gas-works which do not at present recover benzole; (*b*) increasing the efficiency of existing recovery plants; and (*c*) tuning up works practice generally; though in regard to (*c*) the Committee realizes the high standard of works practice already achieved and does not anticipate a great deal of extra benzole by this means.

The question of compulsory action was considered, but the conclusion was reached that it might reasonably be anticipated that undertakings would be ready to co-operate to the full on such an important matter. The Government has accepted this recommendation. Could there ever be a clearer case for the recovery of benzole? It is the duty of gas undertakings which are not recovering benzole to respond to the appeal made by the Minister of Mines. We may add that the Government is setting up an Advisory Committee containing representatives of both the gas and the coke oven industries and will appoint technical officers to act as advisers and give assistance.

WARTIME MOTOR TRANSPORT

SOME time ago the gas undertakings operating in the Greater London area banded themselves together in the London Gas Development Association to consider, and to effect the quickest practical solution to, special problems arising from the use of gas in the national interest in wartime. The gas undertakings concerned were the Gas Light and Coke, the South Metropolitan, the Wandsworth, the South Suburban, the Tottenham, the Croydon, and the Lea Bridge. It will be agreed that this is a strong combination. One of the questions immediately tackled was the utilization of gas as a substitute for imported petrol for motor transport. Last week—as will be seen from a later page—the Association invited representatives of the Press to hear an account of the steps (" strides " would perhaps be a better word) made to date as a result of its co-operative effort. One phase only of the use of gas for propulsion was dealt with—that of low-pressure gas in bags either attached to the vehicle or carried on a trailer. Explanation was given of the arrangements which have been made in the area covered by the undertakings, and beyond that area, and the possibilities of the scheme were unfolded. The Association now awaits response to its endeavours, and we feel sure that the response will not be lacking, for the plans have been well formulated.

One of the most important points which emerged from the meeting was that standardization has been reached in the matter of gas price and garage filling charges and also in regard to the filling point attached to the gas bag. Another important point stressed was that the gas undertakings in the area have not the slightest wish to compete with the automobile industry in affording supplies of gas for private cars and commercial vehicles. At the moment some of the supply points are on the premises of gas companies. This, it was emphasized, is merely a temporary arrangement. As soon as provision is made for the erection of a supply point in a public garage any nearby point on the premises of a gas undertaking will be disconnected. More than seventy different stations in various parts of the Metropolis have now been set up, and the network will expand as the demand for the purpose grows, as it will grow. Already there are about 500 vehicles running on low-pressure gas in Greater London, and it was stated at the meeting that one firm alone had budgeted for the production of 20,000 bags.

Low-pressure gas for motor transport has obvious limitations. The gas bag is ugly. The mileage range a single filling affords is relatively small, and the time needed to fill a bag with gas is, compared with the time taken in filling a petrol tank, very long indeed. But the whole system is simple, and, as we have said before, it is a ready means by which motor vehicles can be kept on the road—an obvious advantage to trade in general and to the motor industry in particular. That, and the fact that gas is not rationed, are the fundamental points. And the London Gas Development Association has certainly done all possible to foster the co-operation and active support of the automobile engineer. It remains for the garage proprietors to make their likely requirements known as soon as is possible to ensure the smooth working of the scheme from the point of view of supply of bags and other equipment. The thing to be avoided is indifference and then, after some time has elapsed, a sudden spate of enquiries. The door is open to the widespread use of low-pressure gas for motor transport in the area, and it was explained at the meeting that plans were in a forward state for extension of the system so that it will be possible for a vehicle equipped with a gas bag to run, for example, from London to Brighton and from Brighton to Bournemouth.

COKE IN THE MIDLANDS.

ON later pages we report the proceedings at the General Meeting of the Midland Counties Coke Association held in Birmingham this month. It was an exceedingly successful and well-attended gathering and there was an atmosphere of optimism abroad, and a feeling of security in regard to future sales of both gas coke and " hard " coke. The extent to which the organization has been developed during a comparatively short period was brought out by Mr. A. W. Smith, Chairman of the Central Committee of the Association, in his remarks at the meeting, and this rapid and thoroughly sound development is tribute to the hard work put in by all concerned. In this regard special mention ought to be made, we think, of the efforts of Mr. Smith and of Mr. F. C. Briggs, Chairman of the Executive Committee, to build up a strong and unified Association.

Altogether the report of the Association's activities which Mr. Smith was able to present was most encouraging. Membership has increased from 92 to 110, and the Association now controls over a million tons of gas coke per annum, which represents nearly 98% of the total tonnage of gas coke produced for inland sale within the area. Most important is the arrangement which has been made with the Yorkshire Coke Producers' Federation and the Derby and Notts Coke Producers' Association whereby minimum prices have been agreed upon. The danger of undercutting—a disastrous policy practised in the past—has thus been eliminated in the spirit of co-operation. Following this arrangement came the setting up of a Coke Distributors' Branch to cover the area, modelled on the plan formulated by the London and Counties Coke Association. Distributors of coke in the Midlands now have a centre to which they can look for advice and assistance in overcoming any difficulties, and membership of the Branch has already reached over 1,200. Again, the Midland Association has become a member of the National Federation of Gas Coke Associations, another move towards strength and cohesion.

We regard as of great importance, too, from the technical and market development point of view, of the Association's intimate contact with the L.C.C.A. Members are at liberty to call upon the Technical Department of the London Association for any service they may require. At the meeting Mr. Briggs, who rightly suggested that the amount of attention given to the promotion of coke sales has been disproportionately small in relation to that extended to gas sales, spoke in particular of the possibilities of extending the use of coke for agricultural purposes. There should be ample possibilities of the use of coke in this direction in the Midland area, and gas undertakings will doubtless be contacting with farmers and will make potential business known to the Association. The case for grass drying and the saving of crops was admirably put by Captain C. Speke in a letter to *The Times* recently. He pointed out that in dried grass we have all the equivalents of imported concentrated foods for cattle, sheep, pigs, and poultry. It can be dried and sold at a profit at £9 10s. per ton, which is about the present price of concentrated foods. " The national economic advantage of a wide system of drying plants," he wrote, " is almost beyond calculation; the work goes on ' wet or shine,' and instead of one-third in average years and perhaps three-quarters of our crops in wet seasons being spoilt and wasted, a drier makes a certainty of producing a perfect and palatable foodstuff of high feeding value." Drying a crop entails very little labour beyond what would be expended on a crop which has hung about and been half ruined by the weather. A large amount of the requirements of cattle food could be met easily by the greater adoption of grass drying. Coke is a highly suitable fuel for plants for this purpose, several of which installations, for which the London and Counties Coke Association have been largely responsible, we have described in the columns of the " JOURNAL." As far as the Midland area is concerned, members of the Coke Association covering the district can call upon the advice and aid in this matter, as in other problems, of the L.C.C.A. It is fortunate that this should be so, and we congratulate the Midlands district for welding themselves together and making closer national working possible.

EXPORT—GAS AND COKE INDUSTRIES TAKE ACTION

REPRESENTATIVES of contracting and manufacturing interests in the Gas Industry have been in touch with Mr. D'Arcy Cooper, Chairman of the Executive Committee of the Export Council, with a view to an Export Group being formed in the Industry to assist in the promotion of the greatest volume of export trade which can be achieved under the conditions of war.

The S.B.G.I. Emergency Committee discussed the whole question at a meeting in London on April 11, and on the same date Radiation Ltd. convened a meeting in Birmingham of gas appliance manufacturers with interests akin to their own. Application was then made to the Export Council for recognition of a Main Group to cover contracting and manufacturing interests in the Gas and Coke Oven Industries, with, for the purposes of registration, Mr. Ernest West as Chairman and Mr. M. W. Burt as Secretary, Mr. West and Mr. Burt being respectively Chairman and Secretary of the S.B.G.I. Application was also made for the registration of a Gas Appliances Sub-Group with Mr. Cyril G. Davis as Chairman and Mr. D. A. Japes as Secretary. The Board of Trade has now accorded official recognition to the Main Group and Sub-Group following a report received from Mr. D'Arcy Cooper.

The Export Council made it clear to the Industry's representatives that the first and essential need was that the Export Council should be advised at the earliest possible moment of the requirements of each Industry in raw materials for their export trade, and the necessary returns were sought by letter on April 12 from all members of the Society and other firms thought likely to be interested.

Careful consideration is now being given to the problem of how best to organize firms with common interests to promote export trade. The Sub-Group of which Mr. Cyril G. Davis is Chairman will look after the interests of manufacturers of gas cookers, fires, radiators, water heaters, and similar appliances. Following a meeting of the Council of the S.B.G.I. held on May 2, at which the views of representatives of the Industry were available, it is proposed to apply for registration of two further Sub-Groups, one to be called the Gas and Coke Making Equipment Export Sub-Group, and the other the Gas Meter Makers Export Sub-Group. For purposes of registration, Mr. R. B. Potter and Mr. M. W. Burt will act as Chairman and Secretary respectively of the first of these Sub-Groups, and Col. W. R. Glover and Mr. D. S. Glover, as Chairman and Secretary respectively of the Meter Sub-Group.

It will be appreciated that with the wide diversity of interest which the Society covers, and in view of the fact that many of its members have specialist interests which are common to a number of industries, the most satisfactory grouping will not take shape immediately. The important and first objective must be to see that no one is left out, and to get returns of raw material requirements. A final grouping must await the result of action which is being taken in all the great industries of the country at the instigation of the Export Council.

Membership of the Group and such Sub-Groups as are officially recognized by the Board of Trade will be open to all interested firms whether members of the S.B.G.I. or not. For the present, therefore, any firm which is interested but is not already in touch with the Main Group, and is not proposing to work through an Export Group in another industry, should communicate at the earliest possible moment with Mr. M. W. Burt, Secretary, Gas and Coke Oven Industries Export Group, Uplands, Epsom Road, Guildford, or in the case of cookers, fires, radiators, and water heaters with Mr. D. A. Japes, Secretary, Gas Appliances Export Sub-Group, Radiation House, Aston, Birmingham 6. Announcements regarding the two further proposed sub-groups will be made if and when they are accorded official recognition by the Board of Trade. Thereafter an Executive Committee for each will be formed, which will appoint its own officers.

The Secretary of the Main Group will be responsible for handling all confidential returns, whether called for by the Main Group or the Sub-Groups. An Executive Committee to control the activities of the Main Group will be set up as soon as the field which has to be covered is approximately known, and it will then appoint its own officers.

The Export Council approach their task from the standpoint that the maintenance of Export Trade is so vital a factor in the war effort of the Allied Powers that no measure calculated to contribute to the end in view should be excluded from consideration. In the same spirit will those concerned in the Gas and Coke Oven Industries approach this problem.

Personal

Mr. W. E. WEBB has been elected Chairman of Hounslow and District Chamber of Commerce, on which he represents the Gas Light and Coke Company. Mr. Webb is a member of Heston and Isleworth Borough Council and Chairman of Hounslow Heath Ward Branch of Twickenham Division Conservative Association. He is also a member of Heston and Isleworth Welfare and Comforts' Committee for Middlesex men in the Forces, and their dependants.

Letter to the Editor

Multi-point Water Heating

SIR,—We had hoped that, with our reply to Dr. Bernard Friedman's letter of Feb. 14 last, this correspondence would have ceased, as we are afraid by now it may be becoming tedious to your readers. However, by his further letter in your issue of May 1, Dr. Friedman has carried this discussion to another plane.

While he, Dr. Friedman, refers to himself in his letter as a "pioneer," he does not now deny—in fact, he seems to admit—that the multi-point water heater was well established in this country prior to the introduction of the heater which he subsequently graced with the name of "Ascot," and Dr. Friedman may, in fact, consider himself fortunate that he was thereby spared the necessity and heavy expenditure which he would otherwise have had to incur in building up over a long period of years the popularity and demand for this special type of gas appliance. We still maintain and reaffirm that, however illustrious our followers, we are the "pioneers."

We have noted with interest the views of the Gas Industry as expressed by Dr. Friedman, that the advent of his heater would stimulate the British manufacturers to get out of the rut of conventional and traditional design, &c. Dr. Friedman, however, appears to overlook the fact that the heater he brought over here was every bit as conventional and traditional in design on the Continent as was ours in England, and we believe that some time before he brought this heater into this country it was inspected by representatives of the British Gas Industry in Messrs. Junker's factory at Dessau, Germany, where it had long been a standard product.

Yours, &c.,
EWART & SON, LTD.
Established 1834.

346-350, Euston Road,
London, N.W. 1.
May 3, 1940.

[Opinion freely expressed to us in private confirms that the Industry is interested in the technical and load-building aspects of water heaters rather than historical questions of origins and pioneering. We trust, therefore, that this correspondence, which appears unlikely to reveal anything not already well known, may be allowed to drop.—Ed. "G.J."]

Obituary

Mr. EDWARD WILLIAM GREEN, who of recent years has been in charge of the development of Tufnol Bearings, Ellison Insulations, Ltd., died on April 6.

* * *

The death has occurred at his home at Bruton, Somerset, at the age of 76, of Mr. JAMES PREECE, who for over half a century was connected with the Gas Industry at Malvern, Upton-on-Severn, and Pershore. He was Manager of the old Pershore Gas Company from the beginning of the century until 1934, when the Company, which had been in existence just 81 years, was absorbed by the Cheltenham Company. Mr. Preece retired when the transfer was made. Before going to Pershore 40 years ago, Mr. Preece was Manager of the Upton-on-Severn Gas Company.

* * *

Mr. TOM CLAYTON, of Great Harwood, who died on April 21, at the age of 82, was formerly Works Manager of the Accrington District Gas Board, a position he had held for 18 years. He was engaged in the Gas Industry for about 41 years and retired some time ago. For ten years he was at Bolton, later going to Wales, where he was Gas Manager at Machynlleth for 10 years. For three years he was Inspector and Superintendent at Peterborough.

Eastern Counties Association

Forthcoming Meeting at Norwich

Members of the Eastern Counties Gas Engineers' and Managers' Association attending the 98th Half-Yearly Meeting to be held at Norwich on May 23 are invited to inspect the St. Martin at Palace Works (manufacturing centre) and the Bishop Bridge Works (purification and distribution centre) of the Norwich Station of the British Gas Light Co., Ltd., from 9.45-11.15 a.m. The Business Meeting of the Association will be held in the Recreation Room, and the Chair will be taken by the President, Mr. J. Kennington, at 11.30 prompt. Mr. W. T. Hallam (Bedford) will present a Paper "The Federal Policy as applied to the Gas Industry," after which Luncheon will be served at the Royal Hotel. In the afternoon there will be a visit to the Broads. It had also been hoped to arrange a visit to a local manufacturing works, but owing to conditions now existing this was not possible. Tea will be available at the Recreation Room of the Bishop Bridge Works at 4.30 p.m.

The Annual Golf Competition will take place at the Eaton Golf Club, Norwich, on May 22, at 5 p.m.

NEWS OF THE WEEK

Tenders have been Accepted by the Middlesbrough Town Council of Messrs. Cochranes, Ltd., Middlesbrough, J. and R. Ritchie, and the Clay Cross Co., Ltd., Chesterfield, for the supply of pipes for the gas-works.

The Ilfracombe Gas Company announce that they have arranged for wartime cookery demonstrations to be held in the gas showrooms, High Street, Ilfracombe, every Tuesday and Thursday afternoon from now on.

Approval has been Given by the Bradford Corporation Finance (Estimates) Committee to the spending of £11,752 on the installation of additional steam boiler plant and auxiliary coke handling plant at the Birkshall Gas-Works, subject to borrowing powers being granted.

The B.B.C. Announces that on May 21 in the series "Science and the Community" broadcast at 11.40 a.m. in the Home Service, the subject will be the distillation of coal, which William Murdoch achieved in 1792 and used the resulting gas for lighting his house at Redruth, Cornwall.

At a Meeting of the Yorkshire Junior Association held on April 20 in the Town Hall, Shipley, the President, Mr. T. G. Lewis, presented a gold watch on behalf of the members of the Association to Mr. R. H. McCulloch, the late Hon. Secretary of the Association, for the many services he had rendered.

After Receiving a Favourable Report from their Gas Engineer on the wartime street lighting system, the Shepshed Urban Council, at their meeting on April 16, decided to convert street lamps in their area at an estimated cost of £100. The lamps will come into operation next winter and will remain alight from Oct. 1 to March 31, at an estimated cost of £200.

The Advisability of erecting an alternative stand-by electrical plant at the Aylestone Road and Belgrave Gate Gas-Works, Leicester, at an estimated cost of £3,200, is under consideration. This would enable the works to continue operating, even if the main city generating station were put out of action. The work is an A.R.P. measure and would rank for a 50% grant.

The Wales and Monmouthshire Association, for their 35th Annual Meeting on May 23, under the Presidency of Mr. J. Prosser Jones, will meet at the Grand Pavilion, Porthcawl. A preliminary notice issued by the Hon. Secretary, Mr. E. M. Edwards, announces a Paper by Mr. H. D. Madden on "The Gas Industry in Peacetime and War."

The Appropriation of a section of the site of the old gas-works at the junction of Addison Street and George Street West, Blackburn, as children's playing grounds, has proved so popular that it has been decided to make this a permanent innovation, and the Blackburn Corporation Gas Committee have approved the transfer of the land for this purpose. A portion of the site is at present set apart as an A.R.P. centre.

The Parliamentary Committee of Durham County Council has reported that, in connexion with the Special Order promoted by the Durham Gas Company, the Company have given an undertaking that they will execute an agreement regarding the breaking up of streets as soon as reasonably practicable after the date upon which the Order is made. The County Council has, therefore, withdrawn its opposition to the Order.

At the Ordinary General Meeting of the Montevideo Gas & Dry Dock Co., Ltd., to be held on May 21, the Directors will recommend payment of a final dividend of 3% free of income-tax, 2% of which payable on May 22, 1940, and 1% on Dec. 2, 1940, making with the interim dividend of 1% paid Dec. 1, 1939, 4% free of income-tax for the year ended Dec. 31, 1939.

Thirty-Five Cookers Were Sold as a result of a series of lectures given recently in the showrooms of the Guernsey Gas Light Company. Over 1,300 people attended during the fortnight, and considerable local interest was aroused. On the last evening, Mr. R. G. Luxon, Engineer, Manager, and Secretary of the Company, expressed hearty appreciation to Miss E. Sanderson, of the Radiation Research Kitchen, who gave the lectures.

Copies of the Following recently issued British Standard Specifications can be obtained, on application, to the Secretary of The Institution of Gas Engineers, 1, Grosvenor Place, London, S.W.1 : No. 891-1940. Method for Direct Reading Hardness Testing (Rockwell Principle), price 2s. each ; and No. 893-1940. The Method of Testing Dust Extraction Plant and the Emission of solids from Chimneys of Electric Power Stations, price 5s. each.

Notice is Given by the Prescot and District Gas Company of their intention to apply to the Board of Trade for an Order under Section I of the Gas Undertakings Act, 1929, to authorize the Company to raise by the creation and issue of ordinary and/or preference shares or stock an amount not exceeding £50,000 in addition to any capital which the Company are already authorized to raise under existing Acts and Orders. The Order also seeks power to borrow on mortgage or by the creation and issue of debenture stock.

A Letter has been Received by the Seaham Urban Council from Mr. E. Shinwell, M.P., for the Seaham Division, regarding the coal carbonization plant at Seaham. Mr. Shinwell recently asked the Minister for Mines in the House of Commons whether it was proposed to make use of the plant, and the Minister stated the matter was under consideration. The Minister of Mines states that the re-starting of the plant depends a good deal on whether a coke suitable for use in transport gas producers can be made This point was being investigated.

The Supply of Coke Oven Gas from the Hardwick Colliery Co., Ltd., to Sutton-in-Ashfield, was inaugurated recently by a formal ceremony. The contract is for a substantial quantity, and the negotiations have spread over a long period. The ceremony was performed by Mr. J. A. Percival (Chairman of the Sutton U.D.C.) in the presence of upwards 50 members of the Council, officials of the Hardwick Company, and friends. Before the ceremony, the party made a tour of the by-product works. A luncheon followed at Hardwick Inn. Mr. Percival stated that the Council's Gas-Works were now no longer producing gas.

Devised to Assist Housewives in catering with restricted food supplies, wartime cookery demonstrations were recently held by the Stockport Corporation Gas Department, in collaboration with the Parkinson Stove Company. A series of lectures was given by Dorothy Scott, Diplomee, N.T.S.C., of the Parkinson Stove Company in the air raid shelter, under the Gas Showrooms, Petersgate, and the keen interest shown by very satisfactory audiences was reflected in the gratifying number of Parkinson gas cookers purchased during the demonstrations. Members of the Town Women's Guild attended the Lectures on two afternoons during the first week.

Forthcoming Engagements

May

9.—Federation of Gas Employers.—Annual Meeting of Members in Scotland, North British Station Hotel, Edinburgh, 11.30 a.m.

9.—N.G.C.—Annual Meeting of Members in Scotland, North British Station Hotel, Edinburgh, 2.30 p.m.

18.—Scottish Western Juniors.—Address by N. G. MacGregor, on "Education."

22.—Southern Association.—Eastern District Meeting, Gas Industry House, 2.30 p.m.

23.—Eastern Counties Association.—Spring Meeting at Norwich. Paper by W. T. Hallam (Bedford) and Works visit.

23.—Wales and Mon. Association.—Annual Meeting at Grand Pavilion Hotel, Porthcawl.

25.—Midland Juniors.—Visit to Chatterley-Whitfield Collieries, nr. Stoke-on-Trent.

25.—Manchester and District Juniors.—Meeting at Stockport. Paper by J. B. Walsh, "Co-ordination of High and Low Pressure Gas Supplies."

25.—Yorkshire Junior Association.—Meeting and Paper by A. E. Wilson (Huddersfield), "Town Gas in Foundry Practice."

June.

4 & 5.—I.G.E.—77th Annual General Meeting in London.

5.—N.G.C.—Annual General Meeting, May Fair Hotel, Berkeley Street, W.1, 2.30 p.m.

5.—S.B.G.I.—Annual Meeting, Grosvenor Hotel, Victoria, S.W.1, 2.30 p.m.

28.—Waverley Association.—General Meeting, North British Station Hotel, Edinburgh.

Results at Brisbane

In their report for the half-year to December last, the Directors of the Brisbane (Queensland) Gas Company state that the sales of gas show a very satisfactory increase. Over the whole year the quantity of gas sold was 19,000,000 cu.ft. more than in 1938. At December last the total number of consumers supplied was 33,873, an increase of 664 during the half-year. The demand for gas has been consistently good, and 2,070 additional major gas appliances were installed in the six months, besides much other apparatus for commercial and industrial purposes. The gas sold in 1939 was 668,456,000 cu.ft., and considerable capital expenditure is being incurred in keeping pace with the growing demand. A dividend for the half-year of 3½% is being paid.

National Safety Congress

The National Safety-First Association is holding a one-day National Safety Congress in London on May 17.

The key-note is safety measures in wartime. Included in the industrial section programme is an address by Mr. A. W. Garrett (H.M. Chief Inspector of Factories) who will deal in a general way with wartime safety problems in factories. The Congress will then settle down to detailed consideration of the major problem due to rapid increases in numbers employed.

In the morning, under the chairmanship of Lord McGowan, the Association's President, there will be a paper on "How to Train New Employees in Safety," by Mr. B. Ungerson, of the National Institute of Industrial Psychology.

In the afternoon, with Sir Duncan Wilson in the Chair, Mr. H. Malin, of the British Thomson-Houston Company, will deal with "Specific Teaching for New Employees about Machine Tool Hazards."

There will also be an address after lunch by the Home Secretary and Minister of Home Security, Sir John Anderson, on "Wartime Safety Measures Affecting Education Authorities and Industrial and Transport Undertakings."

Fuel Luncheon Club

Members of The Institution of Gas Engineers will be welcome at a Meeting of the Fuel Luncheon Club to be held at the Connaught Rooms, Great Queen Street, W.C.2, on Thursday, May 9, at 12.40 for 1.10 p.m., when the after Luncheon Address on "Some Reflections on the Fuel Industries," will be given by Mr. George Hicks, M.P., General Secretary, Amalgamated Union of Building Trade Workers.

The cost of the Luncheon is 6s. per head (exclusive of gratuities and liquid refreshments) and anyone wishing to be present should forward his remittance of 6s. to the Secretary of the Club, Mr. R. T. Rees, 30, Bramham Gardens, S.W.5, when a ticket will be sent to him. This ticket must be given up to the waiter at the Luncheon and no refunds can be allowed.

S.B.G.I. Golfing Circle

Despite the fact that officially the Circle has suspended its activities during hostilities, Mr. W. R. Edgar, the Hon. Secretary and Treasurer, informs us that many requests have been made that a joint golfing meeting of members of The Institution of Gas Engineers and the Society should again be held when members are in London for the 77th Annual General Meeting of the Institution. It is, therefore, proposed to organize an informal joint meeting on Monday, June 3, at the R.A.C. Country Club, Woodcote Park, Epsom. Mr. H. E. Bennet, who is captain of both the Golfing Circle and the Country Club, has kindly made the necessary arrangements.

As so many members of both bodies are serving with H.M. Forces, no trophies will be competed for, but a voluntary sweepstake will be arranged for both morning and afternoon rounds, half the proceedings to go to the Red Cross. Any member who has not already received particulars can obtain an entry form by application to Mr. W. R. Edgar at Blenheim Works, Hammersmith, W.6.

Mid-day meals are served to approximately 180 students a day, as well as to the staff, from this up-to-date kitchen of the Impington Village College, Cambridge. All the gas equipment was supplied by Radiation, Ltd.

Correct Positioning of Grill Pans

Among recent patents is one taken out by R. & A. Main, Ltd., and G. W. Wortley (No. 518,698; application date Sept. 3, 1938), which is concerned with means for positioning correctly pans on the crown plate of a cooker beneath the grill. For the purpose the crown plate is provided with means for positively locating the grill-pan upon it.

The crown plate is formed from sheet metal and is provided with a suitably shaped projection for locating the grill pan, which projection is pressed upwardly from the under surface of the crown plate. Since grill pans, as usually employed, are rectangular in configuration, a single projection which has a U-shaped configuration as viewed in plan is arranged to engage the two corners of the grill pan which are to be disposed farthest away from the front of the cooker. The upper portion of the projection is rounded and the base of the projection merges in a curve with the upper surface of the crown plate.

Another feature of the invention consists in dishing the upper surface of the crown plate in order to prevent splashings from the hotplate or from the food being grilled from trickling down the sides of the cooker. This may be effected by providing the crownplate with an upstanding marginal ridge which, in the case of a sheet-metal crown plate, may be formed by a pressing operation. Preferably, the marginal ridge, at least at the front of the crown plate, merges in a gradual curve with the upper surface of the plate; this enables the accumulated splashings readily to be swept away.

Savings Certificates for Long Service

During past years the Directors and employees of the Wellington Tube Works, Ltd., have jointly recognized long service by presenting their associates who attain 50 years of service with the Company with an illuminated address, together with a sum of money, and when it was decided recently to acknowledge 25 years of service it was considered that the national interest would also be served by making a presentation of War Savings Certificates.

On May 2, this presentation was made by Mr. Douglas W. Turner, J.P. (Chairman and Managing Director of the Company); and 50 employees of the Company each received 25 War Savings Certificates in recognition of loyal and faithful service. Preceding the presentation was a display by the "Wellington" Division (Great Bridge) of the St. John Ambulance Brigade, whose members are all employed in the Company.

Also present at the gathering were Mrs. Douglas W. Turner, Mr. Roger Turner, and Directors of the Company, Mr. W. H. Nock and Mr. W. H. S. Elliott. It is interesting to note that Mr. Nock this year attains 60 years of service in the Company and still retains a lot of his old vigour.

The "B.E.A." Handbook

The 1940 Edition of the British Engineers' Association Classified Handbook of Members and their Manufactures, has just been published, and within the next few weeks 5,500 copies are being posted (free of all cost) to carefully selected known buyers of engineering products in the home and overseas markets. Experience of previous B.E.A. distributions justifies the confident expectation that a substantial increase in the flow of enquiries and orders to members will result. Copies of the Handbook will also be posted free of charge to purchasers of British engineering plant, machinery, and accessories, on application being made on a business letter-heading to the Secretary of the Association, Mr. Henry E. Jones, 32, Victoria Street, S.W.1.

The object of this Handbook is to establish a closer contact between buyers overseas and the engineering firms which are members of the British Engineers' Association. It is hoped to achieve this object by spreading more widely a knowledge of their products and facilitating the direct transmission of orders and enquiries to them by providing, in concise but clear form, the information required for that purpose.

Scrap Iron and Steel Prices

The Minister of Supply has made the Control of Iron and Steel (No. 7) (Scrap) Order, 1940, Direction (No. 3), increasing the maximum prices for scrap iron and steel as from May 6, 1940, to meet the recent increase in railway charges.

In the case of scrap iron and steel for the manufacture of steel ingots, otherwise than in electric arc furnaces, the maximum prices have been increased by 1s. 6d. per ton for consumers in South Wales (West); by 1s. per ton for consumers on the North-West Coast and in Cheshire (including Shotton), Brymbo and South Wales (East); by 6d. per ton for consumers in the Midlands (except for two grades of cast iron which are increased by 1s. per ton); and by 9d. per ton for consumers in all other districts. All other grades of scrap are also increased by 9d. per ton.

Copies of the Direction may be purchased from H.M. Stationery Office, or through any bookseller.

CO-OPERATIVE COKE SALES IN THE MIDLANDS

A General Meeting of the Midland Counties Coke Association, which was well attended, was held at the Grand Hotel, Birmingham, on April 18, when the Central Committee submitted its report for the year ended December 31, 1939. The Chair was taken by Mr. A. W. Smith, who outlined the Association's activities to date.

In the course of his remarks, Mr. A. W. Smith, Chairman of the Central Committee of the Association, said that membership had increased from 92 to 110 and that a little over one million tons of gas coke per annum was controlled as against 975,000 tons last year. This tonnage represented nearly 98% of the total tonnage of gas coke produced for inland sale within the Area, and though no figures for the hard coke sold within the Area under mutually agreed conditions were available, he thought the combined figures would make quite an impressive total.

He pointed out that the arrangement with the London and Counties Coke Association for technical service continued, and besides the monthly bulletin which members received they were at liberty to call upon the Technical Department of the London Association for any service they required.

Probably the most interesting event of the year had been the contact established with certain important Associations of Hard Coke Producers. A Committee had been set up composed of representatives of these Hard Coke Producers, Distributors in the Area, and the Association, under the Chairmanship of Mr. F. C. Briggs. When war broke out considerable efforts had been made to continue these meetings in spite of the difficulties of travelling and they had been held about once a month, when a variety of problems were discussed amicably and helpfully, and constructive recommendations had been made to the Central Committee of the Association.

Distributors

Immediately following the arrangement with the Hard Coke Producers had come the setting up of the Coke Distributors' Branch, modelled upon that of the London and Counties Coke Association. The object of the Branch was to organize all the Coke Distributors trading in the Area of the Association into one body, so that it was possible to negotiate fair and equitable trading conditions. The full costs of the Branch were borne by the Association, and it had its own Secretary, Mr. W. Griffiths, and its own office, where Distributors could take all their difficulties or queries respecting the scheme, and obtain all the information they required. Provision was made for a Joint Committee of Producers and Distributors. Membership of the Distributors' Branch had already reached over 1,200.

Mr. Smith continued: "Soon after we had completed our arrangement with the hard coke producers and had taken the first steps towards the formation of the Distributors' Branch, the outbreak of war rendered all our plans uncertain. We could not see very far ahead in the early weeks and were not sure at the time exactly how the activities of the Association would be affected by Government control. However, we decided to follow two courses —to continue our usual activities as far as the new conditions would allow, and to place the services of the Association at the disposal of the Government. So that this should not be an idle offer, it was implemented by getting in touch with the Mines Department and the various officials appointed by that Department to deal with fuel, such as Divisional Coal Officers, Coal Supplies Officers and Local Fuel Overseers. Contact was established with them and they were encouraged to use the Association as a kind of Information Bureau for Coke. In return the Divisional Coal Officers have given a sympathetic hearing to those of our problems with which they can help. Permission was obtained from the Mines Department for the Secretary to receive copies of all circulars issued to Local Fuel Overseers and a résumé of all relevant information contained therein has been passed on to Members.

Prior to the outbreak of war, an agreement was reached between the National Federation of Gas Coke Associations and the Ministry of Mines that the latter would accept a "Price Assurance" from the Federation in place of direct Government Control in the event of war. This Association communicated with all gas coke producers in its Area and was able to obtain an assurance from them that coke prices would not be raised without the sanction of the Ministry. For this purpose, and in subsequent negotiations, we took under our wing the non-members of the Association, so that we could speak for the entire Area.

Soon after the outbreak of war it was realized that increased production costs would necessitate some increase in coke prices. The history of the application to the Mines Department for an increase in the price of coke is known to members.

Apart from the increase of 2s. 6d. per ton in respect of increased production costs, the Mines Department also authorised an increase to cover extra delivery costs. This was left in the hands of Local Fuel Overseers, who had authority to permit an increase up to a maximum of 1s. per ton.

National Federation

Mr. Smith mentioned the National Federation of Gas Coke Associations and said that this body had come into existence at the right time as it had been possible, through it, to negotiate with the Ministry of Mines on a National basis, and also to meet the hard coke interests in a similar way. He mentioned the formation of Coke Associations in other districts.

"The year 1939 must always stand out as an eventful one from a national standpoint. Looking at it from the point of view of the Association it was equally eventful, but fortunately in a happier sense, and it is gratifying to record the considerable progress made.

"During the year we met the first impact of war conditions and their unsettling affect, but on looking back we find that it has not restricted the objects or the usefulness of the Association. That the gas coke producers in the Area were associated in one body, and that that body was incorporated in the National Federation of Gas Coke Associations, was a very fortunate factor in negotiations between coke interests and the Ministry of Mines. Individual producers cannot speak with such authority as a compact Federation, representing an impressive tonnage of coke, and we were not only fortunate to be grouped together in this Association, but were able to speak with still greater confidence, through the National Federation, for the entire gas coke producing industry of the country.

"I think we should feel glad that the organization of this Association and of the National Federation was started when it was, so that both were sufficiently on their feet by the time war broke out to take their right places in the field of coke interests."

Mr. Smith then formally moved the adoption of the Report and Accounts.

Mr. F. C. Briggs (Chairman of the Executive Committee) seconding their adoption, spoke of the very great importance, from the technical point of view, of the Association's intimate contact with the London and Counties Coke Association. In general, he suggested, the amount of attention given to the promotion of coke sales was disproportionately small in relation to that extended to gas sales. The London and Counties Coke Association, he emphasized, had been active in developing the use of coke for agricultural purposes. In their own—the Midland—area, there were ample possibilities for the use of coke in this direction; and he suggested that those gas undertakings in agricultural areas should contact with farmers and let the Central Office know if they had not sufficient supplies of coke for the demand.

The year under review, he said, had been marked by marvellous success, and it was good that the Association's activities had not been delayed. Mr. Briggs concluded his remarks by appreciation of the work carried out by Mr. Smith, by the County Price Advisors, and by Miss O. A. Price, Secretary to the Association.

Mr. Smith also added his tribute to the sterling work of Miss Price.

A vote of thanks to Mr. Smith, proposed by Mr. George Dixon, President of The Institution of Gas Engineers, and seconded by Mr. L. P. Ingram, brought the meeting to a close.

North of England Association

The North of England Gas Managers' Association held their Annual Meeting at Newcastle on May 3. It was their first meeting since the war and it drew a very representative attendance, principal guests including Mr. G. Dixon (President of The Institution of Gas Engineers) and Dr. W. T. K. Braunholtz (the Secretary of the Institution).

The meeting was preceded by a luncheon at which the President of the Association, Mr. T. Law, of Malton, presided, and welcomed the guests. Replying, Mr. Dixon referred to the report of the committee set up to investigate the possibility of increasing the amount of liquid products obtained by high-temperature carbonization and the most advantageous means of utilizing these in wartime. He had been under the impression that it was a secret report but noticed reference had been made to it in the Press that day. Gas undertakings were already carrying out some of the recommendations.

At the meeting which followed, it was decided to make a donation of £10 10s. to the Benevolent Fund of the Institution of Gas Engineers.

The President then gave his Presidential Address, which will be published in a subsequent issue of the "JOURNAL."

Mr. H. P. Allison (Redcar) was elected President for the ensuing year, and Mr. S. A. Wikner, of Newcastle, Vice-President.

Members elected to the Committee were: G. W. Martin (Houghton-le-Spring), J. W. Pallister (Middlesbrough), and B. Richardson (Newcastle). Mr. H. Douglas Lees (Hexham) was re-elected Hon. Secretary and Mr. C. C. Walmsley (Sunderland) Hon. Auditor.

The following new members were elected: A. Facer (Carlisle), Member; John P. Medd (Darlington) and John Brownlee (Newcastle), Associate Members.

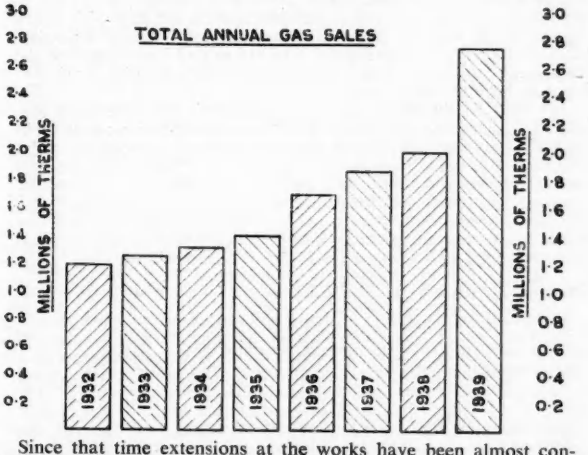
A presidential certificate was presented by Mr. Allison to the retiring President, and the meeting concluded with tea at the County Hotel.

SWINDON'S OUTPUT TREBLED IN EIGHT YEARS

Recent increases in the industrial load at Swindon have served to draw attention to the persistent enterprise which has produced a phenomenal growth in the output of gas in the area during the past decade. From small beginnings the Undertaking has grown almost into a 1,000 million cu. ft. per annum concern, and it has absorbed several small neighbouring companies, most of whose manufacturing plant has been closed down.

THE history of the Swindon United Gas Company in the past few years reads like a romance, with rural development and keen industrial gas salesmanship as the outstanding features of its progress. From less than 300 million cu.ft. in 1932 its annual make rose to 639,724,000 cu.ft. last year, and this year it will be a surprise if it does not reach 850 millions, with an increasing percentage of industrial consumption. In achieving these results it has had to contend with many unusual circumstances. Swindon, to the casual visitor, appears to be two towns knocked into one, the Old Town and the New. The New Town is the home of the locomotive, carriage, and wagon building and repairing works of the Great Western Railway which, although the staple industry of the town, does not consume any of the town's gas because it makes its own supply. Outside the rural belt surrounding the town there were several small and, in some cases, obsolete, gas undertakings which had to be absorbed before any real expansion could be achieved.

Gas supply at Swindon started with a small Company which confined its operations to the Old Town. As the New Town grew it inaugurated its own separate undertaking, the New Swindon Gas Company, which was established in 1862 and incorporated by Special Act in 1893. In 1902 the two Companies joined forces under the name of the Swindon United Gas Company, with a statutory area of about 26 sq. miles. It was not until about ten years ago, however, that the real possibilities of expansion were realized. Over a period of two years the personnel of the old board was completely changed, and in 1932 Mr. C. H. Chester, formerly Deputy Engineer and Manager of the Wakefield Gaslight Company, became Engineer, General Manager, and Secretary at Swindon in succession to Mr. E. George Vince.

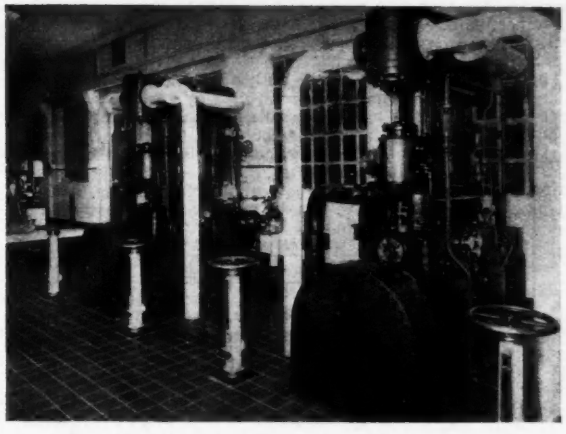


Since that time extensions at the works have been almost continuous. Output has increased three-fold, prices have been drastically reduced, a valuable industrial load has been acquired and amalgamations of neighbouring undertakings have placed Swindon in the forefront of progress, with the early prospect of reaching the 1,000 million cu.ft. mark. Strictly speaking, the grouping of the outlying companies has been carried out under the Swindon and District Gas Corporation, Ltd., which, unlike the more usual type of holding company, has effected the physical consolidation of the Swindon United Gas Company with six neighbouring companies, each of which retains its separate name.

Advertising Pays Handsomely

At the time of Mr. Chester's appointment, the annual make was decreasing (the figure in 1932 being 297,604,000 cu.ft., against the highest earlier figure of 323,311,000 cu.ft. in 1929). Then, as now, the town's staple industry was producing its own gas, and the well-managed Corporation electricity undertaking was making substantial headway. Mr. Chester set to work at once to regularize pressures, to supply a uniformly good quality of gas, and to do all possible to encourage its use for industry and in the home. Indeed, the reconstruction and extension schemes which he inaugurated then are still proceeding according to plan in order to keep pace with the continuing rise in demand.

A bold advertising policy was put into operation. From the time he took charge, until the war started, Mr. Chester made it a rule to appropriate £1 per million cu.ft. of gas sold to local advertising, and he has an unequivocal answer to the question "Does advertising pay?" in the results which he has been able to report to the Board from year to year.



Bryan Donkin Compressors, each of 50,000 cu. ft. per hour capacity, in the new Power House at Swindon

When Mr. Chester took charge at Swindon, the Company was charging 14.8d. per therm, and there was no higher discount than 10%. In the intervening years the price has been progressively reduced until to-day it is 28% below the 1932 figure, notwithstanding a rise of 23% in the cost of coal in the same period. There were two price reductions in 1932, and 502 new consumers were obtained, bringing the total to 17,053. A year later the price of gas was again reduced, 854 consumers were added, sales of appliances jumped by 73%, and gas sales by over 20 million cu.ft. The report for that year recorded concessions over a period of eighteen months representing a saving to consumers of £7,000 per annum, and there was a rise of £2,000 in the wages bill. In 1934 there was a two-part tariff, a general price reduction, with concessions for industrial purposes, representing in all a fall of 14% in price over a three-year period. Sales of appliances exceeded all records, and 548 more consumers came in. From January, 1937, a more favourable rebate was granted to prepayment consumers; the rebate, instead of being 1s. 4d. all round, being made 1s. 4d. for the first pound and 2s. 6d. on each subsequent pound. Domestic gas sales in Swindon alone in 1936 were 60 million cu.ft. higher than in 1935, and the aggregate price concessions to consumers represented a larger figure than the amount of the dividends.

Consolidation of Seven Companies

The first step towards the consolidation of the neighbouring Companies was taken early in 1934, and by the end of that year control had been acquired of the Wootton Bassett Highworth and Faringdon Companies. A few months later the Marlborough Company was also taken over. Mr. W. B. Claridge, Secretary and Manager at Marlborough, became Deputy General Manager of the combined undertakings, and the Marlborough Directors retired in favour of the Swindon board, then under the chairmanship of Major Wright. Before the end of 1935 the Fairford Gas Company came into the group, followed in 1937 by the Cirencester Gas Company. Within twelve months of being taken over each of these smaller undertakings showed increased sales ranging from 30 to 50%, due to intensive canvassing, the adoption of hire-purchase facilities, tariffs, and better all round service.

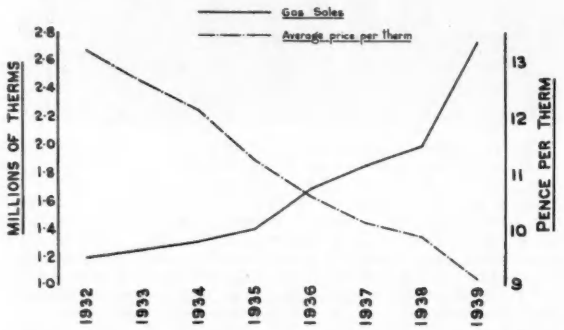
A glance at some of the figures from the acquired Companies is of interest. At Cirencester gas sales rose from 75,961,000 cu.ft. in 1937, to 84,009,800 cu.ft. in 1939; Fairford from 5,318,600 cu.ft. in 1936, to 7,004,600 cu.ft. in 1939; Faringdon from 11,455,500 cu.ft. in 1934, to 17,815,900 cu.ft. in 1939; Highworth from 4,302,900 cu.ft. in 1934 to 9,104,500 cu.ft. in 1939; Marlborough from 30,588,700 cu.ft. in 1936, to 34,610,100 cu.ft. in 1939; and Wootton Bassett from 9,508,800 cu.ft. in 1935, to 13,036,900 cu.ft. in 1939.

During this remarkable period of progress there has been scarcely a single halt in the extension of the works. The old layout had prevented any expansion, but the new plant installed since 1932 has been so designed as to allow for all possible developments on the present site and additional land has been acquired for future requirements. In 1934, twelve Jenkins intermittent vertical chamber ovens, with coke screening and grading plant, were installed at a cost of £25,000, and at the same time the Directors embarked upon a five-year plan for the laying of 27 miles of main, bringing the total up to 120 miles, at a cost of £30,000. The carbonizing plant was further extended in 1936, and contracts were placed for 18 miles of steel main from Swindon to Highworth and Faringdon at a cost of £10,000. This work, together with the

high-pressure boosting plant, was a four months job, on the completion of which the manufacturing plant at Highworth and Faringdon was dismantled. Several further extensions to carbonizing plant, mains, coal handling plant, &c., have since been necessary, together with new purifying, condensing, tar extraction, and other plant. The works railway system has been modernized and a water tower erected to enable the works to use its own water supply from an old clay pit.

The general idea in serving the outlying districts has been to run a large high-pressure ring main, controlled by governors, with low pressure mains for the more accessible areas. The local manufacturing plants except Marlboro' (where the Coke Market has a marked effect on economics) having been discarded, the supplies from Swindon are distributed through the local works, and the mains are tapped *en route* for the purpose of supplying the intervening hamlets. So effective was the preliminary canvassing in the

DIAGRAM SHEWING ANNUAL GAS SALES
WITH AVERAGE PRICE PER THERM



little hamlet of Kempsford that, before the supply was actually laid on, 57 out of the 59 houses had been provided with gas cookers. Many other hamlets showed equally good results.

One of the latest improvements at the works is the fine new power house, one of the best in this country, the credit for the design of which Mr. Chester shares with Mr. G. F. Oliver, Chief Technical Assistant and Draughtsman. The generating, boosting, metering, and exhausting plant is conveniently housed on the first floor, where there is ample room for further extensions, and the piping system is accessibly situated on the ground floor.

Building the Industrial Load

Industrial gas utilization at Swindon has been developed on sound lines. In the first place it was realized that price must bear a proper relationship to service, and several concessions were, therefore, given to large consumers. Another important point was the maintenance, as far as possible, of a steady load factor over the 24 hours of the day which, obviously, could best be secured by selling gas at a lower rate during the night off-peak hours. When the ordinary price of gas was 1s. per therm, Mr. Chester introduced an experimental large consumer tariff of 10s. per quarter standing charge, irrespective of the size of the premises, and gas at 9d. per therm. A year later, some time before Londoners had ever heard of the idea, he introduced "half-price gas," and he can claim to have been the first to offer this concession in this country. His new two-part tariff was a quarterly standing charge of 13s., with gas at 6d. per therm for the first 15,000 cu.ft. and the rest at 4½d. in the two winter quarters, and at 6d. per therm flat for the two summer quarters. In introducing this two-part-cum-bloc rate he was making a direct onslaught on cheap current for heavy cooking and heating loads, and the outcome was a rapid increase in consumption. Recently, on account of increased costs, the low gas charge has been increased by a halfpenny all round (making 6½d. and 5d. in winter and 6½d. in summer).

The new tariff appealed not only to the purely industrial user but also to the larger domestic consumer. In order to popularize the scheme among domestic consumers and to reap the greatest advertising advantage, it was stipulated that there must be at least four gas appliances on the premises, of which one must be a gas fire in a ground floor room, one a cooker, one a water heating appliance, and the other a light or other appliance. Consumers changing over to the tariff were given the opportunity of purchasing any number of appliances up to five on a 10 years' hire-purchase basis. The scheme proved a huge success.

Six years ago only 2½% of the gas sold at Swindon was consumed between 10 p.m. and 6 a.m., and special efforts were, therefore, made to establish a higher off-peak load. In conjunction with Messrs. George Wilson Gas Meters, Ltd., Mr. Chester evolved a meter that would register gas at different costs at different hours. Special reduced night rates were, therefore, offered and the bakery trade of the town was energetically canvassed, with the result that to-day there are only two bakeries not yet running on gas. In one instance a battery of oil-heated ovens was converted to gas firing, the conversion being carried out by the Company in consultation with Mr. H. Mitchell, of Leicester, who has helped materially in this way in building up Swindon's industrial load. That bakery is now taking 30 million cu.ft. of gas per annum. The comparatively small number and variety of industries in the town made progress somewhat slow, but as the result of persistent effort an off-peak load of 90 million cu.ft. was developed, representing 16% of the total output being used during the eight slack hours of the night.

Gas Displaces Oil and Electricity

The fish frying trade was next canvassed with such success that every registered establishment in the district has now changed over to gas firing. Clothing factories, although not large industrial users, provided another favourable field of activity in the way of room heating and the cooking equipment in their staff canteens. One of the largest printing works which had previously used electricity and oil changed completely over to gas, which is now employed for central heating, gas fires, and metal melting—formerly done with oil, also power generation, displacing current.

A branch factory of Messrs. W. D. and H. O. Wills introduced gas for the treatment of tobacco, and found it so successful that a regular quarterly consumption of from three to four million cu.ft. was ensured. Among general industrial establishments there was one which installed gas-fired boilers for central heating the factory and offices, and gas equipment in the canteen, producing a load of 20 million cu.ft. per annum, and in several other factories the Company succeeded in putting in gas engines and miscellaneous equipment. A milk factory is a large consumer by gas fired boiler for steam for its sterilizer.

Having established a substantial business in purely industrial directions, Mr. Chester launched a campaign among the hotels. Practically all the modern kitchens were equipped with gas appliances, most of the hotels introduced bedroom gas fires, and in several of them central heating systems were introduced. The local churches were then canvassed, and quite a lot of gas heating was sold, while in two or three places of worship the Company also succeeded in putting in lighting installations which the church authorities agreed were marvellous.

Throughout his efforts, Mr. Chester has aimed not merely at raising the number of consumers but at increasing the consumption per consumer factor. In the domestic sphere he has paid keen attention to water heating and made it his aim to see that every house had either a wash copper, multi-point heater, or gas water heater of some kind, with the result that the Company has been installing over 70 gas wash boilers per month for the last five years, and other water heaters have been going in at the rate of between 30 and 40 per month. Formerly Monday, being a cold meat day, was usually a day of small output, in rather striking contrast to the traditional Sunday mid-day cooking load, but Monday wash day has now become the best day of the week.

The story of Swindon's advertising efforts is too long to be told here, but there are two matters that are worthy of mention. As part of a gas fire campaign a lorry was fitted up to imitate a fire engine, and paraded the streets laden with gas fires on sale. Salesmen made house to house calls and sold hundreds of fires over the doorstep, mostly on a small deposit hire purchase basis. On another occasion the Company made a whirlwind offer of 2,000 free gas fires to the first applicants, and thus, at comparatively small cost, secured 2,000 new outlets for gas consumption.

Output Doubled in Cold Spell

Following an increase of 37% in output last year, Swindon is doing even better this year, with an average increase to date of a little over 50%. The cold spell early in the year imposed a considerable strain on the works, but quality and pressure were maintained and there were no complaints from consumers. The peak of this year's output was reached on Jan. 17, when in a single day 1,380,000 cu.ft. more gas was sent out than on the corresponding day of 1939, showing an increase of 98.5% uncorrected, or 101.3% corrected. In passing it might be added that Jan. 17, 1939, showed a modest rise of 210,000 cu.ft. over the same day in 1938. The lowest daily increase recorded to date this year was 32% on March 22. On nine days in the first quarter of the year there were increases of over 70%. There is little doubt that this year's total will reach 850 million cu.ft.

Notwithstanding the heavy expenditure on extensions in recent years, the capital per million cu.ft. of gas made has fallen from £989 eight years ago to £508 to-day. The Company is fortunate in having an enthusiastic board of Directors, comprising Mr. T. Medcalf, Chairman; Mr. E. W. Beard, Vice-Chairman; Mr. H. V. Slade, and Mr. W. A. Stanier, with Mr. Chester as Managing Director.

With the Co-operation of the Industrial Engineers of the Australian Gas Light Company, Messrs. Poels & Co. (Aust.) Pty., Ltd., have installed the latest type of gas-fired equipment for smoking Mayfair hams, bacon, and smallgoods. These products are hung in the smoke room which measures 8 ft. wide by 5 ft. deep by 8 ft. high. The room is provided with three tube burners extending the full length of the chamber. Sawdust is piled in heaps on the floor and is in direct contact with the gas flames. This produces the requisite smoke, and, owing to the fine controllability of gas, the operators are able to adjust the temperature and the volume of smoke to a nicety.

DEVELOPMENTS IN THE INDUSTRIAL GAS FIELD

SMOKELESS INDUSTRY AT WELWYN GARDEN CITY

WITHIN the past four years the Watford and St. Albans Gas Company has practically trebled its industrial load, and it is growing as rapidly as the Company can deal with the situation. Plant is now being installed for about a dozen firms representing a total load of about 500,000 cu.ft. per day and enquiries are in hand which, if they materialize, will take a further 750,000 cu.ft. per day. For the March quarter this year the industrial load was 36% higher than for the corresponding quarter of 1939. Watford itself is the home of a variety of industries and among the largest consumers are two printing companies who use gas for all their metal melting processes. In one large plating works in the borough all the process heating is by gas, and the steam required is raised in gas fired boilers.

Welwyn Garden City, however, affords the outstanding example of the use of gas in modern industry. The town, world famous for its freedom from smoke, its wide open spaces and its ideal planning, was founded 20 years ago following the acquisition by Welwyn Garden City, Ltd., of several thousands of acres of land adjoining the main London & North Eastern Railway, about 20 miles north of Kings Cross. It was planned on the principle of zoning well defined areas for industrial, residential, commercial, and other forms of development, the industrial area being situated immediately to the east of the main line railway. Factory development has been carried out by Welwyn Commercial Buildings, Ltd., a subsidiary of the parent Garden City Company, and one of the ways in which it has co-operated with the Gas Company has been in connection with central heating schemes on the low-pressure hot water supply basis, heated by gas-fired "Ideal" boilers.

Central Heating Included in Rent

The principle has been applied in a novel way to small groups of sectional factories. As an example, there is a group of eight factories in one road, with a total area of 22,000 sq. ft., and the entire group is heated from one central boiler house. The nearness of residential property and the general desire of the City Fathers for a clean atmosphere, as free as possible from smoke and fumes, led to the decision to use gas-fired boilers, and the grouping of factories made it possible to arrange for one boiler to serve a whole block, and even then a much smaller boiler house was used than would have been needed for solid fuel firing for a single factory. Chimney stacks were eliminated, labour was reduced to a minimum, and in one road alone some 70,000 sq. ft. of factory space is now heated in this way. The scheme is working extremely well. The boilers themselves are under exact control, and the installations in the separate factories are also thermostatically controlled. The great advantage from the manufacturers' point of view (and it must be remembered that they are all relatively small concerns) is that they do not have to bother about heating at all. The heating system itself is by unit heaters in the factories and radiators in the offices. The responsibility for providing the heating rests on the Commercial Buildings Company, while the Gas Company attends to the correct operation of the boilers and the system generally. The tenants pay an inclusive rental to cover the heating, and the owners have fixed the charges so that they collect just sufficient to cover the actual charges.

In the case of the larger factories the manufacturers make their own separate arrangements, but in both instances it has been found that gas is much more flexible than any other form of heating, and from the point of view of temperature control it is, of course, far superior.

Industrial gas consumptions at Welwyn Garden City over the past five years have grown as follows: 1935, 20,498,400 cu.ft.; 1936, 23,560,300 cu.ft.; 1937, 25,364,000 cu.ft.; 1938, 28,047,900 cu.ft.; 1939, 41,524,900 cu.ft. These increases have fitted in pretty well with the general industrial development of the town over the same period, but there are indications that there will be a considerable jump in the future. This position has been achieved in the face of strong competition from electricity, which is supplied by the Welwyn Garden City Electricity Company, whose bulk supply comes from the Northmet Company, and in some quarters at any rate there has been a tendency to think in terms of an "All Electric City."

Gas Displaces Oil

The largest individual consumer at Welwyn Garden City is the Shredded Wheat Company, Ltd., which formerly used oil ovens and has now installed some of the finest gas-heated baking ovens in the world. The ovens, three in number, which are electrically controlled and gas heated, were designed by Mr. E. P. Webster, Engineer of the National Biscuit Company of America, the parent company of the Shredded Wheat organization, and were erected by the Company's own staff. Each oven has an hourly gas consumption of just over 7,000 cu.ft., and is fitted with 40 ribbon type burners, maintaining a steady temperature of 500° F. The prepared wheat passes through the oven on the continuous conveyor principle, the cooking process from entering to leaving the oven taking just one hour. Each oven has an output of 71.5 cases of 36 boxes of 12 portions (or a total of 30,888 breakfasts) per hour.

The Shredded Wheat Company has always prided itself, quite justly, on the purity and cleanliness of its factory and surroundings; indeed, the absence of smoke pollution was one of the factors that determined the choice of the factory site. In normal times some 15,000 visitors are shown round the factory each year, and although, owing to war conditions, this form of advertising has been suspended temporarily, the Gas Industry will have a permanent advertisement of considerable value when visitors are once again welcomed to the works and shown how the food is cooked.

Other Welwyn Installations

Other large industrial consumers at Welwyn Garden City are the British Lead Mills, Ltd., producers of lead pipes and sheet lead, conduits for gas and electricity, &c., the lead baths throughout the works being gas-fired. The Gas Company is negotiating with another big factory for the displacement of oil by gas-fired furnaces, and the gas consumption will be in the region of 80 million cu.ft. per annum. It is anticipated that the kilns used at this factory will burn for five years at a stretch.

The town is now the home of 70 manufacturing firms of varying sizes and covering an immense range of interests. While there is probably still a considerable undeveloped field for industrial gas, there is scarcely a factory among them that does not already use gas for one purpose or another. Besides those already mentioned there are factories for the production of agricultural machinery, beverages, bootlaces, building slabs, cattle foods, chocolates, clothing, confectionery, cosmetics, dog foods, drugs, electrical equipment, enamels, lampshades, moulding powders, radio sets, springs, structural steelwork, waterproofing compounds, and wire. Many of them already enjoy the benefits of central heating by gas, and the possibilities of other applications of gas in their various enterprises are not being overlooked.

Gas Company's Growth

In recent years The Watford and St. Albans Gas Company has absorbed, besides St. Albans, the Elstree, Harpenden, Hemel Hempstead, Rickmansworth, and Welwyn and Hatfield undertakings. Works extensions have been in progress continuously since 1930, and are still being carried out to cope with the increasing load. All the works are inter-connected on the low-pressure system. From one works 45% of the output is pumped into a high-pressure distribution system which forms an interesting grid around the Eastern area. There is a ring main of about 35 miles connecting Hatfield, Welwyn Garden City, Welwyn, Harpenden, Radlett, and Elstree, and gas is supplied from the H.P. main through reducing governors to these towns, but during hours of peak consumption the holders at each old works augment the supply.

These improvements have enabled the Company to provide gas to a number of outlying works on favourable terms, and in one particular instance the availability of gas at high pressure has resulted in a substantial consumption by an industry which would have been unable to adopt gas at all if it had been confined to low pressure. The Gas Company serves an area of 225 sq. miles, and has over 500 miles of main. There are no fewer than 23 local Government bodies in the area, each of which now has its own Fuel Overseer. In every district where the public lighting is by gas, the Company has offered to instal experimental star-light equipment, although, at the moment, there has been no general adoption of this form of street lighting in the Company's area.

Gas Furnace for Aeroplane Parts

The safety and all-round efficiency of modern aircraft depend upon the reliability of numerous small steel parts. These parts develop their maximum strength by heat treatment before they are incorporated in the 'plane. To ensure complete dependability in this respect, the De Havilland Aircraft Co. Pty., Ltd., of Australia, has installed a modern gas-fired air-blast semi-muffle furnace designed by the Australian Gas Light Company to cover all heat treating operations between the range of 650° and 1,000° C., states the *National Gas Bulletin*.

Many parts used in aircraft construction are pressed from steel sheets, and the internal strains set up are relieved by normalizing in the new furnace. The furnace is fitted with Cambridge potentiometer-type indicating and recording controller, which automatically governs and records the temperature of the furnace continuously. Working dimensions of the new equipment are 18 in. by 24 in. by 12 in. high, measuring at the spring of the door arch.

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Sales of Gas and Appliances in Wartime

From a Paper to the Manchester and District Junior Gas Association, April 27.

By H. Q. MARRIS, Stretford

On the outbreak of war the sales of gas to domestic consumers dropped by nearly 15%. There were three main reasons—public lighting, evacuation, and rationing.

Public lighting accounted for a drop of 3%. We have been making experiments with "starlight" lamps, and at the moment we have 300 on order.

This will help to make up the drop in public lighting sales, and, in addition, it will keep our gas lamps in use, and in so doing should tend to check any tendency to replace gas by other forms of lighting at the end of the war.

At the beginning of the war nearly all schools within the Gas Board's area were closed. Therefore our central heating load, which was substantial, fell considerably. In a few weeks time, however, most of the schools in Sale and Urmston had been reopened, and our central heating load in these areas rose to normal.

Many of the schools in Stretford are now occupied, and heat is required for 24 hours a day. In addition, a new technical college, equipped with gas-fired central heating, was put into operation a few weeks after the outbreak of war. As a result of these two factors, our central heating load in this area is greater than the normal peacetime load.

Sales Effort Reorganized

Upon the outbreak of war and the introduction of war risk insurance, our sales effort was reorganized.

The Board's first step was to suspend the sales of all types of appliances normally sold on hire-purchase. Stocks were then taken of existing appliances in the three showrooms and in the works stores, after which the Board decided to work these stocks down very considerably. At the same time it was decided to concentrate on the disposal of a large number of second-hand, high-grade cookers and other appliances.

These cookers were all returns from consumers who had purchased them on a ten-year hire-purchase agreement, and who had been transferred from the district. The cookers were renovated and were then re-offered for cash or on simple hire terms. During the first three months of the war more than 300 second-hand cookers were disposed of in this way. No new cookers of any description were purchased during that period.

After a few months the community had settled down to war-time conditions and it was soon found that there was a definite demand from the public for some modified form of hire-purchase or simple hire; therefore, in January, 1940, the Board decided to offer appliances on the following terms:

(a) Coke gas grates were offered for a first payment of £1 and the balance of hire-purchase to be paid over the next twelve months.

(b) Cookers and other appliances were offered for cash or on a two-year hire-purchase agreement to consumers above military age or in reserved occupations.

(c) The ten-year hire-purchase cooker was withdrawn at the beginning of the war and it was decided not to renew this scheme.

In its place the Board now offers a high-grade cooker of the latest design on simple hire at 6s. 6d. per quarter, fixed free. At the moment we are concentrating on only three types of cooker and we intend to keep the numbers and types of cookers down to a minimum.

With the exception of December, our sales have shown a continual increase month by month from September.

Business has been maintained at a high level in spite of drastic reduction in sales representation. As a matter of interest the total value of all domestic appliance sales made for the year ended Mar. 31, 1940, amounted to £26,745, as compared with £32,905 for the year ended Mar. 31, 1939.

Sales Representation

After the outbreak of war practically the whole of the Board's activities were curtailed, and for a short time little was done in the direction of sales representation.

We have now restarted our district sales representation, and, while it is appreciated that we shall not be able to carry this out as fully as we do in peace-time, we intend to keep in touch with our consumers so as to maintain our service to them throughout the period of the war.

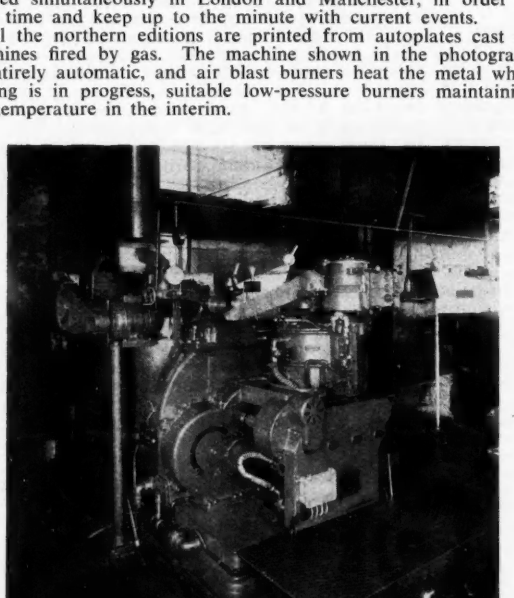
Entirely to eliminate personal representation of the Board's activities would, we are certain, be a great mistake, and much of the work which has been carried out for years in building up this connexion will be wasted unless something more than a skeleton service is given to our domestic consumers. We have during the last few weeks decided to reintroduce some modified form of home service, and the necessary personnel have been engaged for this work.

We are confident that our domestic sales will not deteriorate, but will rather tend to improve as time goes on.

Manchester "Daily Express" Relies on Gas

For many years, the northern edition of the *Daily Express* has been printed in Manchester, but up to quite recently, the *Sunday Express* was produced solely in London. Both papers are now printed simultaneously in London and Manchester, in order to save time and keep up to the minute with current events.

All the northern editions are printed from autoplates cast on machines fired by gas. The machine shown in the photograph is entirely automatic, and air blast burners heat the metal when casting is in progress, suitable low-pressure burners maintaining the temperature in the interim.



Gas is also used for re-melting the Linotype metal, which is poured into moulds to produce ingots for use in the Linotype machines.

The whole of the building is warmed by gas-fired boilers, a portion of the building being air conditioned and the remainder warmed by the usual system of radiators and piping. The boiler plant is housed on the roof, and thus valuable space in the basement is released for production purposes.

Meals are provided for the staff in a well laid out, all-gas canteen, and it can be truly said that in the case of the Manchester *Daily Express* gas is playing a very important part in maintaining the high efficiency which is so essential to modern newspaper production.

Gas for Sugar "Burning"

The "burning" of sugar, as carried out on a large scale for the manufacture of cordials and other beverages and foods, is a delicate operation requiring careful control of temperatures. A few degrees of excess heat would spoil perhaps half a ton of sugar. The *National Gas Bulletin* of Australia refers to a new plant for burning sugar before its use as a caramel in cordials which has been set up by Wilce's Cordial Manufacturers, of Newtown, Sydney, with the object of ensuring exactness of temperature in this connexion. The equipment includes a copper pan to hold 7 cwt. of sugar heated by gas to the design of the Australian Gas Light Company. The pan is fitted with mechanically-driven stirring blades and is directly fired by six special 2½-in. drilled tube burners fitted with the latest A.G.L. 2-in. by 1-in. inspirators. Sugar melts at a temperature of about 325° F., and in the Wilce Factory special care is taken to hold it at a predetermined heat of that order to ensure that no carbonization takes place.

Steaming in Horizontal Retorts

By M. HAMSHAW, Brighouse

From a Paper to the Yorkshire Junior Gas Association, April 20.

This Paper records experience obtained at the Brighouse Gas-Works.

At Brighouse, benzole extraction is carried out to the extent of 3 gal. per ton of coal carbonized. This has the effect of reducing the calorific value by about 25 B.Th.U./cu.ft., but since the declared C.V. is 500 B.Th.U./cu.ft., still further dilution is required.

Steaming was first commenced at Brighouse in 1934 when there were then six beds of ten retorts each, the retorts being through retorts 20 ft. long and 24 in. wide by 18 in. deep. They are set in pairs, the bottom rows being charged every 24 hours and the rest every 12 hours. The average weight of the charge employed was 16½ cwt., a projector type charging machine being employed. This is perhaps not the best type of machine for use in conjunction with steaming as it depends upon the human element for the laying of an even charge. The coal carbonized was all slack coal, about three-quarters of it being washed slack and the rest dry cleaned slack. Steam was admitted through ⅛ in. orifice plates at a pressure of 42 lb./sq.in., each orifice being controlled by separate valves. The point of steam admission was a ½ in. pipe let into the top of the cast-iron mouthpiece of the retort at the charging side of the bench. Anti-dip valves are employed in the hydraulic main and at the commencement of the steaming period the one at the steam inlet end is closed, thus compelling the steam to travel the full length of the retort. The steaming periods employed were the last three hours for a 12-hour retort and the last six hours in the case of a 24-hour charge. The steam was measured on a recording meter and was admitted to the extent of 5% by weight of the charge.

The effect of the steam was to increase the make per ton from 12,950 cu.ft. to 14,000 cu.ft. and the thermal yield from 64.8 therms a ton to 70. However, the thermal efficiency of carbonization was reduced from 67% to 62.5%, this figure taking into account coal carbonized and the saleable products, gas, coke, tar, and benzole. This reduction in efficiency is due mainly to the fact that the coke made for sale dropped from 8.4 cwt. per ton of coal carbonized to 7.4 cwt.

This loss of 1 cwt. of coke means that about 14 therms have been sacrificed as coke in order to gain 5 therms of gas, a net loss of 9 therms being entailed. This, of course, does not necessarily mean that a financial loss has been sustained. When considering the economic aspect of the matter, several other items, such as initial cost of the steaming system, maintenance charges, and any effect steaming may have upon by-products, must be taken into account. In our case, it was found that steaming had no marked financial effect. This does not imply that it is always financially neutral, as it is clear that the relative demands for gas and coke are going to have a considerable effect.

Among other results of steaming was a very marked diluent effect upon the condenser liquor. This suggests that a fair proportion of the steam was not being decomposed. In works where there is difficulty in getting rid of the liquor where the liquor is to be concentrated or made into sulphate, this dilution by the undecomposed steam may be a serious drawback, since, assuming 40% decomposition and 5% by weight of steam admission, an extra 6½ gal./ton is produced.

There was no marked effect upon the benzole or tar.

Although there was some slight reduction in scurf production noticed, this was not very great.

Consider the position of the engineer who must choose between overpulling and steaming. In the past the evils attendant upon overpulling have been considered to be many and varied. It has been stated that the increase in specific gravity consequent upon overpulling necessitates the use of a bigger distribution system. Even if this is granted, it must be remembered that steaming increases the Sp.Gr. even more than overpulling. Another objection against overpulling is that any air drawn in at the retort door leads to gas being burnt in the ascension pipes and also to stopped ascension pipes. Properly fitting retort doors will eliminate both these troubles. Remembering the marked diluent effect which steaming has upon liquor it would seem that, except in certain cases, it has no marked advantages over overpulling. These certain cases may occur in instances in which the relative demands for gas and coke are such as warrant steaming.

The problems attendant upon the war, such as the difficulties of transport and the keeping of coal stocks, may revive interest in steaming.

"Specification" 1940

Reviewed by "Critic"

Notwithstanding war emergency conditions the 1940 edition of Specification (Architectural Press, Ltd., price 10s. 6d.) is of the usual high standard; it is pointed out in the preface that the greater part of the work for the 1940 programme was in hand before war commenced.

Those concerned with building construction will find that Specification fills the gap between the building construction text-books and building materials text-books; and, being revised annually, it gives information concerning proprietary systems and materials which change constantly and are not suitable for inclusion in text-books.

Trade divisions have been brought up to date, the most drastically revised divisions being as follows: Roads and Footways, Carpenter and Joiner, Heating and Ventilating Engineer, Ironmonger, Plasterer, Metal Worker, and Roofer.

The Electrical Engineer division is an exemplary work and it is, to say the least of it, not to the credit of the gas interests that the Gas Engineer division does not appear in this 1940 edition. It is noted that the British Electrical Development Association continues to support the Electrical Engineer division.

Gas Heating is dealt with in the Heating and Ventilating Engineer division and gas water heaters are also considered. Coke fires and gas and coke central heating installations are well covered, as in previous years.

The 42nd issue of Specification should continue to find a wide circle of readers especially among those students of building construction who wish to keep in step with the times.

Gas Bags on the Move

London Area Developments Explained

On Wednesday last, at Gas Industry House, the London Gas Development Association explained to members of the Press how gas for transport purposes is now practicable throughout the whole of Greater London. The Association comprises eight undertakings in the area—the Gas Light and Coke, South Metropolitan, Wandsworth, South Suburban, Tottenham, Croydon, Commercial, and Lea Bridge.

Mr. S. C. Leslie (Acting Secretary of the Association) presided at the conference, and he was supported by Mr. Stephen Lacey (Gas Sales Controller of the Gas Light and Coke), Mr. A. B. Seton (Sales Manager, South Metropolitan) and Mr. W. Dieterichs (Manager of the Industrial Section, Gas Light and Coke).

A network of supply points has already been set up in the area, and now owners of commercial vehicles and private cars can fill their gas bags at more than 70 stations in various parts of the Metropolis. The number is expected rapidly to increase. It was explained that bags on private cars will cover from 12 to 20 miles without refilling; lorries do up to 20 miles or more. Gas has no ill effect on the smooth running of the engine. In some ways it is better than petrol, since there is no carbon deposit and the engine will start from cold more easily. There is, however, some loss of power and speed, due to increased wind resistance and additional weight, when a bag is fitted. However, up to 25 m.p.h. the extra wind resistance of the gas bag is almost negligible.

The cost of conversion at present varies from £30 for an 8 h.p. car to £48 for a 3-ton lorry. In running costs, it was stated at the meeting, there is little difference between petrol and gas. One-and-a-quarter to one-and-a-half therms of gas will do the work of one gallon of petrol. Elevenpence per therm will be charged for all gas for motor transport in the area, plus a filling charge which goes to the garage. This means that a bag which will do approximately the work of a gallon of petrol will cost 1s. 8d. to 2s. (including filling charge).

Now both private and commercial vehicles can have unlimited mileage within the area served by the supply points, with the only inconvenience of frequency of filling. Additional supply points are to be erected, and it is hoped that it may be possible to arrange a chain of points along many of the main routes out of London.

It was pointed out at the meeting that some of the supply points are on the premises of gas companies. This, it was observed, is a temporary arrangement. As soon as provision is made for the erection of a supply point in a public garage any nearby point on the premises of a gas company will be disconnected.

Many questions were put at the meeting and were answered either by Mr. Leslie or Mr. Dieterichs, and it was emphasized that it was the desire of the gas undertakings concerned to hand the business over to the garage proprietors. Mr. Dieterichs mentioned that already 400 to 500 vehicles were running on low-pressure gas in the Greater London area, and that one firm making gas bags had budgeted for an output of 20,000. It was emphasized, too, that the use of gas for motor transport had the blessing of the Ministry of Mines. The advantages of the trailer gas bag in certain circumstances, such as where the route passed under overhanging trees and exceptionally low bridges, were also touched upon.

Company Meetings

SOUTH-WESTERN GAS AND WATER CORPORATION

The Sixth Ordinary General Meeting of the South-Western Gas and Water Corporation, Ltd., was held at the Registered Office of the Corporation, 9, Clements Lane, Lombard Street, E.C.4, on Thursday, May 2, 1940, Mr. R. B. H. OTTLEY (Chairman of Direetors) presiding.

The REPRESENTATIVE of the SECRETARIES (Close Brothers, Ltd.) read the notice convening the meeting, together with the report of the Auditors. The Directors' Report and Statement of Accounts for the year ended Dec. 31, 1939, were taken as read.

THE CHAIRMAN'S ADDRESS

Moving the adoption of the Report and Accounts, the CHAIRMAN said: There are a few points to which I would like to draw attention. The share capital shows an increase of £12,978, which is accounted for by the issue of 2,978 redeemable cumulative preference shares of £1 each as part purchase of a company to which I will later make reference, and the placing of 10,000 shares of £1 each for cash. No further debentures have been issued during the year. The investments in subsidiary companies show an increase, which is accounted for by the acquisition of the Glastonbury Corporation Gas Undertaking and the Launceston Gas Company, which purchases were completed in July, 1939.

I feel it is appropriate to add a few words to the statement of the Directors, in their Report now before you, upon the item "Investments in Other Companies." I referred to this item at the last Annual General Meeting, and it will no doubt be appreciated that the international tension which extended almost throughout 1939, culminating in the outbreak of war in September, has in no small degree contributed to the difficulties of your Board in reaching what one might term the appropriate valuation of the investments. Having regard to all the circumstances, and after taking all reasonable steps to acquaint themselves with the position, the Board have decided to maintain for the present the valuation as shown in the balance-sheet. In this item in the balance-sheet also is included the holding in the General Gas and Electricity Co., Ltd., of preferred shares, and a small holding of ordinary shares.

Under an arrangement with other shareholders and creditors of this Company, a new Board was elected as from Oct. 1, 1939. The Corporation has one Director, and, in addition, two members of the new Board are Directors of Close Brothers, Ltd., who are our Secretaries. The management is now being conducted from 9, Clements Lane, and it is hoped that, in spite of war conditions, it will be possible to improve and develop the operations of the Company, which functions in a few important areas. I have recently learned that sales of gas are increasing, and I am aware that operating expenses have decreased. We may, therefore, look forward with reasonable optimism to the future of this investment.

At the last Annual General Meeting reference was made to co-operation established with Central Administration of the United Kingdom Gas Corporation, Ltd. This has developed rather along the lines of a friendly understanding, resulting in the termination of the temporary formal agreement as from Nov. 1, 1939. Central Administration is now concentrated at 5, Marsh Street, Bristol, and Mr. Fred Allen was appointed General Manager on Nov. 1, 1939. He is directly responsible to the Board for manufacture, distribution, sales, and general administration. Your Board, following the declaration of war last September, took steps to set up a temporary management organization, and are applying it to all constituent companies. The effect of this will be to enable prompt measures to be taken in any particular emergency. This is intended to be a "War Emergency Scheme."

Increased Sales of Gas

I am pleased to be able to report an increase of approximately 3% in the amount of gas sold over the corresponding period of 1938. It is proper to point out that this increase is in the aggregate, because certain of the constituent companies are participating in the industrial demand for gas and are also benefiting through the re-distribution of population; while, on the other hand, other companies are not so fortunate.

In regard to the statement pursuant to Section 126 of the Companies Act, the Padstow and St. Columb Gas Company (loss of £20 6s. 8d.) is improving, and, with reasonable conditions in the current year, it is hoped that a profit will be shown for 1940. The General Engineering & Construction Company, being the other company referred to, is a wholly-owned subsidiary, and the profits rise or fall in relation to the amount of new works undertaken by constituent companies. Capital expenditures are necessarily limited in these days, and this must react unfavourably upon the operations of this small company. As to the Camborne Gas Company, I am able to say that it showed very great improvement over the previous year, and due regard will be paid to the reference made by the Auditors in respect of leasehold property. The Seaton, Axminster, and District Gas Company is also referred to, and, having regard to the amount expended in deferred maintenance, your Board is not unaware of the desirability of setting up further depreciation reserves.

The Corporation has had to face, in common with practically the whole Gas Industry, further increases in the cost of coal during the year. The greatest attention, therefore, has been focussed on improved preparation and marketing of residual products, and in contracting for coal supplies.

We have had recourse to our Bankers for overdraft facilities, which were necessary to provide funds to meet the cost of acquisitions during the year. Under regulations now current, it may be impracticable to fund this loan; but it is the intention of your Board to issue, if permitted to do so, further share or loan capital to adjust the position.

Your Board feel that during this year there has been definite progress, in spite of war conditions which have ruled during the last quarter of the year. They take this opportunity of expressing their appreciation of the able services of the General Manager throughout the year under review, and particularly since Sept. 2, 1939. I should like to conclude my remarks with an expression of appreciation of the work done by Local Boards of Directors and by the staffs of the constituent companies, as well as by the members of the Secretariat in London. I anticipate that the work of the several interests will not be less, but rather more, for the duration of the war, and would say in this connexion that all concerned have shown the fullest possible willingness to meet extraordinary demands. The result has been that up to date—and after the rigours of an exceptionally hard winter—our consumers have enjoyed an uninterrupted service, which we have every confidence that, come what may, we may be able to maintain and improve.

The CHAIRMAN then moved:

"That the Report of the Directors, together with the Accounts of the Corporation for the year ended Dec. 31, 1939, as now submitted, be and the same are hereby received, approved, and adopted."

The resolution was seconded by Mr. C. HOLMES HUNT, M.A., and carried unanimously.

Dividends

The CHAIRMAN thereafter moved:

"That the payment of the Dividend at the rate of 4½% per annum on the 4½% redeemable cumulative preference shares for the year ended Dec. 31, 1939, be and is hereby confirmed;

"That the payment of the interim dividend on account of the year to Dec. 31, 1939, of 2%, less income-tax, on the ordinary shares on Oct. 18, 1939, be and is hereby confirmed;

"That a final dividend in respect of the year ended Dec. 31, 1939, on the ordinary shares of 3%, less income-tax, at 7s. 6d. in the £, payable on May 10, 1940, to those persons who were registered holders of the shares at the close of business on April 18, 1940, be and is hereby declared."

Mr. S. J. INGRAM, M.Inst. Gas E., seconded this resolution, which was unanimously agreed.

Re-Election of Directors and Auditors

On the proposition of Mr. C. HOLMES HUNT, seconded by Mr. S. J. INGRAM, the retiring Directors, Mr. R. B. H. Ottley and Mr. C. L. Rosewarne, J.P., C.C., were re-elected to the Board.

On the proposition of Capt. W. J. LIBERTY, seconded by Col. REID-HYDE, the Corporation's Auditors (Messrs. Deloitte, Plender, Griffiths, & Co.) were re-appointed until the next Annual General Meeting, at a fee to be agreed with the Board of Directors.

Vote of Thanks

Capt. W. J. LIBERTY proposed a hearty vote of thanks to the Chairman and Directors of the Corporation for their services during the past year, and also to the staff. The past year, said Capt. Liberty, must have been a very critical one for all gas companies. During the first eight months things were more or less satisfactory—and then, from Sept. 3, they became chaotic, and the work of the Directors and staff increased materially. In that they had produced a balance sheet such as they had, they deserved the cordial thanks of the proprietors, which he had great pleasure in moving.

The vote of thanks was seconded by Mr. W. TRENCH FOX and unanimously accorded.

In acknowledgment, the CHAIRMAN expressed his appreciation of what had been said. Times were not easy; but they hoped to be able to show at least as good a report next year unless something very catastrophic occurred in the meantime.

The meeting then terminated.

Trading Results in 1939

Moss Gear.—Int. 5% (3¾).

Cochran & Co. (Annan).—Int. 2½%, tax free (same).

Hopkinsons.—Profit £209,131 (£224,164); 10%, making 15% (same).

Glenfield & Kennedy.—5% and bonus 7½%, making 17½% (20); profit, £70,548 (£104,647).

SEVERN VALLEY GAS CORPORATION.

The Annual Ordinary General Meeting of the Severn Valley Gas Corporation, Ltd., was held on May 3, at Cheltenham.

Major JULIAN DAY (the Chairman), who presided, said in the course of his speech: In the revenue account the gross amount received from dividends and interest on investments shows an increase of rather over £7,000. This is largely owing to the fact that in this year's accounts we received a full year's dividend from the Shrewsbury Gas Company, whereas in last year's accounts only a half-year's dividend was credited.

Dividends Maintained.

There has been very little change in the rates of dividend paid by the operating companies constituting the group, nearly all dividends remaining the same. We have, however, received the benefit of dividends from the additional amount of investments in the shares of some of the smaller companies. On the debit side of revenue account you will note that interest on bank and other loans stands at £3,428, against a small credit in the preceding year, and that income tax requires approximately £4,500 more than last year. Thus, after providing for taxation, the amount carried to appropriation account is £48,850, which is slightly less than the preceding year. This is offset, of course, by the larger amount deducted from dividends which have been or are to be paid, owing to the higher rate of income tax prevailing. The Directors' report shows that, after allowing for dividends at the same rates as were paid last year, the amount to be carried forward is increased from £12,481 to £16,073.

The accounts of the operating companies reflect the profits of these companies up to Dec. 31 last, and, therefore, are affected by only four months of war conditions. During the year 1939, with the exception of two small companies, there were no increases in the prices charged for gas by these operating companies, but since Jan. 1 higher charges have been necessitated in some instances by rising costs. In some cases, however, no such increases have been found to be necessary as yet, and where made they have been relatively small in comparison with gas undertakings generally throughout the country.

Growth of Gas Sales

The significance of this lies principally in our geographical location in the Severn Valley. This important section of the country is, in most localities, a reception area, in a few localities, a neutral area, and as was to be expected, perhaps, there has been a definite movement to this area of new industries and an increase in population which may not be permanent. In this fortunate area, the dislocation inevitable in wartime is less severely felt. Throughout our territory, deliveries of coal have always been by rail and not by sea, and, therefore, there has been no major interruption in service. Our companies have, of couse, suffered loss of revenue from public lighting, but this has been more than counterbalanced by increased consumption for industrial as well as domestic purposes.

It is, therefore, gratifying to be able to report that the total sales of gas for the group show an increase over the preceding year, and now stand at 3,076 million cu.ft. The number of consumers has also increased, and is now 127,572, some 4,000 more than last year. This steady increase in sales of gas is very satisfactory, and is almost universal throughout the group. Only some of the smaller companies show decreases in sales of gas; all of the larger companies show comfortable increases, and owing largely to the migration of new industries to this area it is safe to predict that the general tendency to increased sales will continue throughout the current year.

In all these respects we are peculiarly fortunate as compared with gas undertakings located in other parts of the country, and, therefore, we have not been obliged to reduce dividends, and in the circumstances would hardly be justified in so doing.

There are many who believe, and I am among the number, that the growth of the Severn Valley area in importance industrially is not based entirely on war conditions, but is of a more permanent character.

Progress of the Group

This is our sixth annual general meeting, and by now it is possible to perceive the effects of a general policy which has been followed since our foundation—namely, the formation of several groups within the area, working in close co-operation. I have alluded previously to separate instances of this policy, but on this occasion it seems appropriate to give a general summary.

The first three companies which formed the basis of Severn Valley Gas Corporation were those at Cheltenham, Gloucester, and Stroud. The Cheltenham Company already covered a wide area, but mains have been extended under our control to Campden and Bidford-on-Avon. The small gas companies at these two towns were almost derelict when they were acquired, but now are thriving and prosperous little undertakings. Sales of gas in the Campden area have been increased since the time of acquisition from 2¼ million to 16¼ million cu.ft., and at Bidford, which was acquired at a later date, from 2½ million to just over 6 million cu.ft.

Following the same policy, the Stroud Company absorbed the gas company at Brimscombe, which was rapidly deteriorating, and gave from Stroud a good supply of gas in that area, where sales of gas have since shown large increases. The Stroud Company also absorbed the gas company at Tetbury, but this is just too far away to permit of bulk supplies from Stroud in present conditions. Meanwhile the Gloucester Company increased its output considerably in its own area, and the three companies work in very close co-operation.

Newport and Wellington Companies

The Newport (Mon.) Gas Company, as I have previously mentioned, has been furnished with coke oven gas, and this has resulted in a great improvement in the gas service at Newport itself. Mains were carried from Newport to Chepstow and Caldicot, giving these two companies also the benefit of a good supply of gas. At Chepstow in the current year to date of that company this has resulted in an increase of some 25% in sales. Also this supply of a high-quality gas obtainable at a reasonable price has made possible the utilization of gas for industrial purposes throughout the Newport area, and at the present time the supply of such gas is a distinct aid to industries in the neighbourhood carrying on important war work.

Farther to the north is another group comprising the Wellington and Ironbridge companies and a number of smaller companies which have been absorbed into these two companies. The Wellington Company has always been very efficiently run, and produces gas at relatively low cost, and the extension of its area of supply is of marked benefit to the localities concerned. Under present conditions, the productive capacity of this Company is hardly sufficient to meet the ever-increasing demands for gas in its extended area. It also supplies the Dawley portion of the Ironbridge Company area with gas in bulk.

The remaining companies are not so closely knit as yet into groups, but in these three groups alone ten small companies have been completely revivified and are now giving a service usually possible only on the part of much larger undertakings. It was a primary purpose of our formation to accomplish work of this character, and it is gratifying to be able to report to you on the substantial progress that has been made along the lines planned so far ahead.

The report and accounts were unanimously adopted, and a vote of thanks to the Chairman, Directors, and staff closed the meeting.

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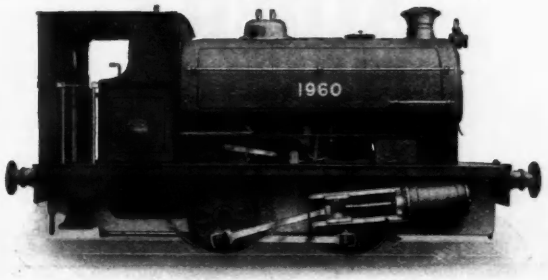

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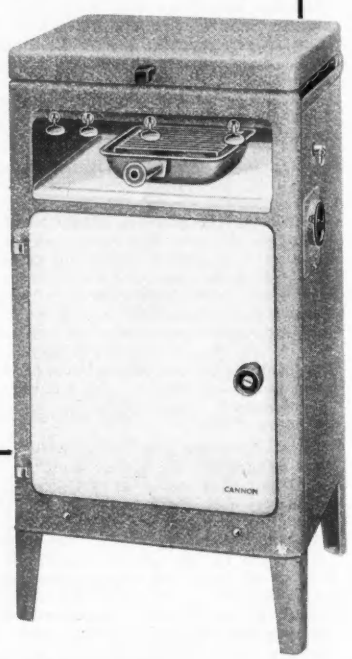

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Current Sales of Gas Products

The London Market

May 6.

There are a few alterations to record in the values of tar products, to-day's values being as under: Pitch about 50s. per ton f.o.b.; creosote, 5d. per gallon; refined tar, 3¾d. to 4d. per gallon; the price of pure toluole under the Ministry of Supply Order is just under 2s. 5d. per gallon; pure benzole, 1s. 10d.; 95/160 solvent naphtha is 1s. 11d. to 2s., and 90/160 pyridine, 18s., all per gallon naked; refined naphthalene crystals about £23 per ton in bags, all *ex* makers' works.

The Provinces

May 6.

Crude Gas-Works tar, 27s. 3d. to 32s. 3d.

To avoid misunderstanding, it is necessary to state that the above price is not claimed to represent a market value. It is a price worked out from week to week upon a system which has been used for many years as a basis for the fixing of certain contracts for crude tar of varying qualities in different areas.

The average prices of gas-works products during the week were: Pitch—East Coast, 47s. 6d. to 52s. 6d. f.o.b. West Coast—Manchester, Liverpool, Clyde, 47s. 6d. to 52s. 6d.* Toluole, naked, North, 1s. 9½d. (Controlled by the Ministry of Supply Order No. 1, which fixes the maximum price at which this material may be sold. Coal tar, crude naphtha, in bulk, North, 9d. to 9½d. Solvent naphtha, naked, North, 1s. 8d. to 1s. 9d. Heavy naphtha, North, 1s. 4½d. to 1s. 5½d. Creosote, *ex* works, in bulk, North, liquid and salty, 4½d. to 4¾d.; Scotland, 4¼d. to 4½d.; low gravity, 4¼d. to 4¾d. Fuel Grade, 4d. to 4¼d. Carbolic acid, 60's. 3s. 6d. to 3s. 7½d. Naphthalene, £15 to £20. Salts, 75s. to 85s., bags included. Anthracene, "A" quality, 4½d. to 4¾d. per minimum 40% purely nominal. Heavy oil: Unfiltered anthracene oil, (min. gr. 1,080), 5¼d. to 5½d.; filtered heavy oil (min. gr. 1,080), 5¾d. to 6d.; heavy anthracene oil gr. less than 1,080, 6d. to 6¼d.

* All prices for pitch are now quoted on the basis of f.o.b. In order to arrive at the f.a.s. value at any port it will be necessary to deduct the loading costs and the tolls, whatever they may be.

Scotland

GLASGOW, May 4.

There is little alteration to report from last week and no great volume of business is passing at the moment.

Crude gas-works tar.—Actual value is 39s. to 40s. per ton *ex* works in bulk.

Pitch is not easy to secure in any quantity and prices are about 40s. per ton f.o.b. for export, and about 37s. 6d. per ton *ex* works in bulk for home trade.

Refined tar.—There is no alteration in the controlled price of 4¼d. to 4½d. per gallon in the home market. The export market is dull and any business on hand is priced at 3d. to 3¼d. per gallon, both f.o.r. naked.

Creosote oil continues in moderate call, present levels being as follows: Specification oil, 5d. to 5¼d. per gallon; low gravity, 6¼d. to 6½d. per gallon; neutral oil, 5¼d. to 5¾d. per gallon; all *ex* works in bulk.

Cresylic acid is not particularly active and prices are about the following: Pale, 97/99%, 2s. 1d. to 2s. 2d. per gallon; dark, 97/99%, 1s. 10d. to 1s. 11d. per gallon; pale, 99/100%, 2s. 6d. to 2s. 8d. per gallon; all *ex* works in buyers' packages.

Crude naphtha.—No great quantity is available, but spot lots are obtained at about 6d. to 6½d. per gallon, *ex* works in bulk.

Solvent naphtha is in steady demand at 1s. 8d. to 1s. 9d. per gallon for 90/160 grade and about 1s. 4d. to 1s. 5d. per gallon for 90/190 heavy naphtha.

Motor benzole is 1s. 6½d. to 1s. 7d. per gallon.

Pyridine.—Prices are nominal at 18s. to 19s. per gallon for 90/160 grade and 20s. to 21s. per gallon for 90/140 grade.

Contracts Advertised

Coal.
Skipton Gas Department. [p. 316.]
Hebden Royd Gas Department. [p. 317.]
Nelson Gas Department. [p. 317.]
Carlisle Gas Department. [p. 317.]
Sidmouth Gas Department. [p. 317.]

Purifier Conversion.
Keighley Gas Department. [p. 317.]

Carburetted Water Gas Plant.
Chelmsford Gas Department. [p. 317.]

Stores.
Leeds Gas Department. [p. 317.]

District Governors.
Warrington Gas Department. [p. 317.]

Purifiers.
Wigan Gas Department. [p. 317.]

Exhauster.
Wigan Gas Department. [p. 317.]

Trade News

The "Keith" Portable Hand Driven Blower

In the event of gas mains being broken, either by enemy action or through any other cause, it is a matter of urgency to get them repaired or capped at the earliest possible moment. Keith Blackman, Ltd., of Tottenham, have just introduced a new form of portable hand-driven blower which admirably solves the problem of rapidly filling rubber or other bags used in the process of bagging-off. As an instance of its efficiency, it is claimed that a bag inserted in a 36 in. main can be inflated in 30 seconds by one man. By reversing the direction of driving the bag can be as rapidly deflated. An efficient safety valve is fitted to prevent over-inflation, with its risk of breaking the bag. The blower is also useful for testing tightness of gas mains up to about 2 lb. pressure.

Quasi-Arc—Ferro-Arc Welding Co., Ltd.

For a long time there has been a close relationship between the Quasi-Arc Company, Ltd., and the Ferro-Arc Welding Company, Ltd., and, in fact, during the last year the electrodes marketed by the two companies have been manufactured in the same factory. The two companies have now carried their co-operation to a logical conclusion and amalgamated, under the name of the Quasi-Arc Company, Ltd., as from May 1, 1940. The amalgamation will enable the technical and sales staffs of the two companies to pool their efforts and should result in improvements, wherever possible, in the quality of their products and in the technical service available to customers.

The quality and individual characteristics of the Quasi-Arc and Ferro-Arc electrodes will, of course, be maintained in the future.

Permac Metal-to-metal Jointing

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GAS STOCKS AND SHARES

Despite events in Norway, stock markets closed firm and confident last week with gilt-edged stocks again making good progress. All the latter closed higher on the week, 2½% Consols finishing a point up at 75 against the official minimum of 70½. Most home rails, after passing through a few irregular periods, maintained their previous week's levels. Industrials were inclined to be irregular although there were no special weaknesses. South African gold mining shares were stimulated by the good returns for April, but oils closed dull and rubbers were neglected.

The Gas Market was comparatively well supported and since there is not a large amount of stock on offer it is evident that any parcels for sale have been speedily absorbed. It will be seen in the list below that in sympathy with the general conditions several fixed-interest stocks hardened a point or two while among "ordinaries" the highest rise occurred in Mid-Southern "C" with a gain of 3 points to 80½, which is still a low price having regard to the Company's resources. Imperial Continental lost a further 3 to 68½. Apart from a rise of 3 in Liverpool 5% preference there were no changes of importance on the Provincial Exchanges. In the Supplementary List Lea Bridge 4% preference recorded a sharp rise of 7½ to 77½.

Except for £20,000 British Gas Light 5% redeemable cum. preference at 115 to yield £4 15s. 9d.% (gross flat) there are no large parcels of gas stocks available, but the following list of some on offer at the time of writing contains several not as a rule readily obtainable which may be of interest:

Amount offered. £	Ordinary.	Dividend basis. %	Price.	Gross Yield. % £ s. d.
210	Barnet	7	148	4 14 6
100	Deal	6	91	6 12 0
30	Gravesend	6	100	6 0 0
56	Liverpool	6	110	5 9 0
1,000	Montevideo	4 (free of tax)	70	9 5 0
500	Oriental	8	117½	6 16 3
20	Sheppey	5½	80	6 8 3
30	Swansea	4	80	5 0 0
1,000	United Kingdom	5	16s.	6 5 0

Amount offered. £	Debenture.	Price	Gross yield. % £ s. d.
864	Commercial 5%	102	4 18 0
405	Do. 3%	67	4 10 0
100	Croydon 4%	92	4 7 6
500	Guildford 5%	108	4 6 0
85	Tottenham 4%	90	4 9 0

The accounts of the South-Eastern Gas Corporation for the year to March 31 last show a net revenue of £152,632 (against £162,399). The Directors recommend a final dividend of 2½% on the ordinary shares, making 5½% on the old shares and 4% for nine months on the new shares. This compares with 6% for 1938-39. After transferring £10,000 (against nil) to reserve, £73,231 is carried forward against £69,321 brought in.

Official Quotations on the London Stock Exchange

Issue. £	When ex-Dividend.	Dividends. Prev. Hf. Yr. % p.a.	Dividends. Last Hf. Yr. % p.a.	NAME.	Quotations May 3.	Rise or Fall on Week.
1,767,439	Mch. 11	8	7	Alliance & Dublin Ord. ...	112—117	...
374,000	Dec. 27	4	4	Do. 4 p.c. Deb. ...	80—90	...
957,608	Nov. 6	5	5	Ascd. Gas & Water U'd'ts Ord.	14/6—16/6	...
500,000	"	4½	4½	Do. 4½ p.c. Red. Cum. Pref.	16/6—18/6	...
535,545	"	4	4	Do. 4 p.c. Red. Cum. Pref.	15/—17/—	...
336,646	"	4	4	Do. 4 p.c. Irred. Cum. Pref.	13/6—15/6	...
750,000	Mch. 18	3½	3½	Do. 3½ p.c. Red. Deb. ...	82—87	...
560,070	Feb. 19	7	7	Barnet Ord. 7 p.c.	123—128	+1
300,000	Apl. 8	1/4⅜	1/9⅜	Bombay, Ltd.	19/6—21/6	...
181,915	Feb. 26	9½	9½	Bournemouth Sliding Scale ...	145—150	...
690,526	"	7	7	Do. 7 p.c. max. ...	120—125	+2
493,960	"	6	6	Do. 6 p.c. Pref. ...	116—121	...
50,000	Dec. 18	3	3	Do. 3 p.c. Deb. ...	70—75	...
362,025	"	4	4	Do. 4 p.c. Deb. ...	95—100	...
335,000	"	5	5	Do. 5 p.c. Deb. ...	105—110	...
357,900	Feb. 19	7½	6¾	Brighton, &c., 6 p.c. Con. ...	103—108	...
659,955	"	6¾	5¼	Do. 5 p.c. Con. ...	100—105	...
205,500	"	6	6	Do. 6 p.c. 'B' Pref. ...	103—108	...
855,000	Mch. 11	7	8	British Ord.	90—100	−2
100,000	Dec. 18	7	7	Do. 7 p.c. Pref.	120—125	...
350,000	"	5½	5½	Do. 5½ p.c. 'B' Cum. Pref.	110—115	...
120,000	"	4	4	Do. 4 p.c. Red. Deb.	77—82	...
450,000	"	5	5	Do. 5 p.c. Red. Deb.	100—105	...
100,000	22 May '33	6	4	Cape Town, Ltd.	¼—¾	...
100,000	6 Nov. '33	4½	4½	Do. 4½ p.c. Pref.	¼—¾	...
150,000	Dec. 18	4½	4½	Do. 4½ p.c. Deb.	53—58	...
626,860	Jan. 29	6	5⅞	Cardiff Con. Ord.	103—108	...
237,860	Dec. 18	5	5	Do. 5 p.c. Red. Deb. ...	95—100	...
98,936	Apl. 8	2/—	2/—	Colombo Ord.	1½—1¾	...
24,510	"	1/4⅜	1/4⅜	Do. 7 p.c. Pref.	20/—22/—	...
739,453	Mch. 26	−/11.48	−/11.48	Colonial Gas Assn. Ltd. Ord. ...	14/6—16/6	...
296,144	"	1/3.30	1/3.30	Do. 8 p.c. Pref.	20/—22/—	...
1,775,005	Jan. 29	4	2	Commercial Ord.	47—52	...
140,000	Feb. 19	4	4	Do. 4 p.c. Red. Pref. ...	87—92	...
620,000	Dec. 11	3	3	Do. 3 p.c. Deb.	62—67	...
286,344	Feb. 19	5	5	Do. 5 p.c. Deb.	97—102	+2
200,000	"	3½	3½	Do. 3½ p.c. Red. Deb. ...	93—98	...
807,560	Feb. 12	7	7	Croydon sliding scale	100—105	...
644,590	"	5	5	Do. max. div.	87—92	...
620,385	Dec. 7	5	5	Do. 5 p.c. Deb.	100—105	...
208,660	Feb. 19	5	5	Dudley, Brierley Hill & Dist. Ord.	98—103	...
82,275	"	5	5	Do. 5 p.c. Con. Pref. ...	93—98	...
79,000	"	3½	3½	Do. 3½ p.c. Red. Deb. ...	93—98	...
239,000	Jan. 29	5	88/6	East Hull Ord. 5 p.c.	70—80	...
187,215	Feb. 12	5½	5½	East Surrey Ord. 5 p.c. ...	93—98	...
176,211	Dec. 18	5	5	Do. 5 p.c. Deb. ...	100—105	...
250,000	Nov. 13	8	4	Gas Consolidation Ord. 'B' ...	15/—17/—	...
250,000	"	4	4	Do. 4 p.c. Red. Cum. Pref.	16/—18/—	...
19,152,410	Jan. 29	5⅜	3⅜	Gas Light & Coke Ord. ...	16/—17/—a	...
2,600,000	"	3½	3½	Do. 3½ p.c. max.	62—67	...
4,477,106	"	4	4	Do. 4 p.c. Con. Pref. ...	87—92	+1
2,993,000	Jan. 2	3¾	3¾	Do. 3¾ p.c. Red. Pref. ...	88—93	+1
8,602,497	Nov. 27	3	3	Do. 3 p.c. Con. Deb. ...	75—80	...
3,642,770	"	5	5	Do. 5 p.c. Red. Deb. ...	105—110	...
3,500,000	"	4½	4½	Do. 4½ p.c. Red. Deb. ...	102—107	...
700,000	Mch. 11	3½	3½	Do. 3½ p.c. Red. Ded. ...	87—92	...
270,466	Feb. 19	6	6	Harrogate New Cons.	93—98	...
157,500	Apl. 8	‡1/—	‡1/—	Hong Kong and China Ord. ...	¼—¾	...
5,600,000	Oct. 23	12	4	Imperial Continental Gas...	66—71	−3
172,810	Jan. 29	3½	3½	Do. 3½ p.c. Red. Deb. ...	80—85	...
63,480	Dec. 18	3	3	Maidstone 3 p.c. Deb.	55—60	...
45,000		†10	†8	Malta & Mediterranean ...	92—102	...
				Metropolitan (of Melbourne) ...		
392,000	Apl. 1	5½	5½	5½ p.c. Red. Deb.	95—100	+2
231,977	Feb. 19	5	5	M.S. Utility 'C' Cons. ...	78—83	+3
968,658	"	4	4	Do. 4 p.c. Cons. Pref. ...	85—90	...
390,076	Dec. 18	4	4	Do. 4 p.c. Deb. ...	85—90	...
148,955	Dec. 18	5	5	M.S. Utility 5 p.c. Deb. ...	103—108	...
125,000	Jan. 2	3½	3½	Do. 3½ p.c. Red. Bds. ...	90—95	...
675,000	Nov. 6	†3	†4	Montevideo, Ltd.	60—65	...
250,000	Mch. 18	7½	5⅞	North Middlesex 6 p.c. Con. ...	103—108	...
396,160	Jan. 29	5	5	Northampton 5 p.c. max. ...	90—95	...
300,000	Apl. 29	9	7	Oriental, Ltd.	113—118*	−2
468,537	Dec. 11	8	7	Plymouth & Stonehouse 5 p.c.	118—123	...
621,667	Feb. 5	8½	8¾	Portsmouth & Gosport Cons.	110—115	...
241,446	"	5	5	Do. 5 p.c. max.	85—90	...
73,350	"	5	5	Do. 5 p.c. Pref.	90—95	...
75,000	"	4	4	Do. 4 p.c. Pref.	75—80	...
114,000	Feb. 5	5	5	Preston 5 p.c. Pref.	88—93	...
247,966	Dec. 18	4	4	Primitiva 4 p.c. Cons. Deb. ...	93—98	...
625,959	Jan. 15	4	4	Do. 4 p.c. Red. Deb. ...	91—96	...
15,000	Mch. 11	6	6	San Paulo 6 p.c. Cum. Pref. ...	7¼—8½	...
441,275	Apl. 29	1/1½	1/1½	Severn Val. Gas Cor. Ld. Ord.	16/6—18/6*	−−/6
460,810	Mch. 11	−/10⅜	−/10⅜	" " 4½ p.c. Cum. Pref. ...	16/6—18/6	...
133,201	Feb. 12	8½	5	Shrewsbury 5 p.c. Ord. ...	105—115	...
9,000	June 5	‡4	‡4	South African Ord.	4—5	...
1,996,297	Apl. 29	1/2⅜	1/	South East'n Gas Cn. Ld. Ord.	15/6—17/6*	−−/6
1,000,000	Mch. 4	−/10⅜	−/10⅜	Do. 4½ p.c. Red. Cum. Pref.	16/6—18/6	...
769,191	"	4	4	Do. 4 p.c. Cum. Pref. ...	15/−−17/−	...
450,000	Feb. 12	4	4	Do. 4 p.c. Red. Deb. ...	95—100	...
150,000	"	3½	3½	Do. 3½ p.c. Red. Deb. ...	89—94	...
6,709,895	"	5	4	South Met. Ord.	68—73	...
1,135,812	"	6	6	Do. 6 p.c. Irred. Pref. ...	107—112	...
850,000	"	4	4	Do. 4 p.c. Irred. Pref. ...	82—87	+2
1,895,445	Dec. 27	3	3	Do. 3 p.c. Deb.	72—77	...
1,000,000	Jan. 15	5	5	Do. 5 p.c. Red. Deb. ...	102—107	...
600,000	"	3½	3½	Do. 3½ p.c. Red. Deb. ...	92—97	...
1,543,795	Feb. 5	6	3	South Suburban Ord. 5 p.c. ...	77—82	...
512,925	"	5	5	Do. 5 p.c. Pref.	95—100	...
500,000	"	4	4	Do. 4 p.c. Pref.	82—87	...
250,000	"	3½	3½	Do. 3½ p.c. Red. Pref. ...	90—95	+1
888,587	Dec. 11	5	5	Do. 5 p.c. Deb.	105—110	...
250,000	"	4	4	Do. 4 p.c. Deb.	85—90	...
200,000	Feb. 12	3½	3½	Do. 3½ p.c. Red. Deb. ...	87—92	...
427,859	Apl. 15	−/9⅜	1/2⅜	S. Western Gas & Water Ord.	13/−−15/−	...
160,523	"	−/10⅜	−/10⅜	Do. 4½ p.c. Red. Cum. Pref.	16/6—18/6	...
110,000	Dec. 18	4	4	Do. 4 p.c. Red. Deb. ...	90—95	...
750,541	Feb. 5	5	5½	Southampton Ord. 5 p.c. ...	77—82	...
148,836	Dec. 27	4	4	Do. 4 p.c. Deb.	85—90	...
350,000	Feb. 12	5½	5½	Swansea 5½ p.c. Red. Pref. ...	97—102	...
200,000	Dec. 18	3½	3½	Do. 3½ p.c. Red. Deb. ...	90—100	...
1,076,490	Feb. 26	6½	5	Tottenham and District Ord....	94—99	...
409,835	"	5½	5½	Do. 5½ p.c. Pref.	103—108	...
62,235	"	5	5	Do. 5 p.c. Pref.	95—100	...
453,380	Dec. 11	4	4	Do. 4 p.c. Deb.	85—90	...
1,247,505	Oct. 23	6	4	U. Kingdom Gas Cor. Ord. ...	14/−−16/−	...
1,085,952	Nov. 20	4½	4½	Do. 4½ p.c. 1st Cum. Pref. ...	15/−−17/−	...
772,709	"	4	4	Do. 4 p.c. 1st Red. Cum. Pf.	14/6—16/6	...
745,263	Dec. 18	4½	4½	Do. 4½ p.c. 2nd Non-Cum. Pf.	13/6—15/6	...
1,093,656	Mch. 18	3½	3½	Do. 3½ p.c. Red. Deb. ...	84—89	...
378,106	Mch. 11	7	7	Uxbridge, &c., 5 p.c.	95—100	...
133,010	"	5	5	Do. 5 p.c. Pref. ...	95—100	...
1,371,138	Feb. 5	6½	3½	Wandsworth Consolidated ...	88—93	...
2,525,768	"	4	4	Do. 4 p.c. Pref.	84—89	...
1,343,964	Dec. 18	5	5	Do. 5 p.c. Deb.	106—111	+1
383,745	"	4	4	Do. 4 p.c. Deb.	85—90	...
400,000	"	3¾	3¾	Do. 3¾ p.c. Red. Deb. ...	90—95	...
558,342	Jan. 29	6¼	6	Watford and St. Albans Ord. ...	95—100	...
200,000	"	5	5	Do. 5 p.c. Pref.	95—100	...
200,000	"	5½	5½	Do. 5½ p.c. Pref.	100—105	...
200,000	"	4	4	Do. 4 p.c. Rd. Pf. (1973/8)	85—90	...
100,000	"	33/4⅜	4	Do. 4 p.c. Red. Pf. (1959)	93—98	...
200,000	Dec. 11	3½	3½	Do. 3½ p.c. Red. Deb. ...	83—88	...

a.—The quotation is per £1 of Stock. * Ex. Div. † Paid free of income-tax. ‡ For year. § Actual.

Supplementary List and Provincial Exchanges overleaf.

STOCK AND SHARE LIST—Contd.

Supplementary List, not Officially Quoted, London

Issue. £	When ex-Dividend.	Dividends. Prev. Hf. Yr. % p.a.	Dividends. Last Hf. Yr. % p.a.	NAME.	Nominal Quotations May 3.	Rise or Fall on Week.
202,152	Mch. 18	5	5	Ascot Ord.	80—85	...
128,182	Dec. 27	5	5	Do. 5 p.c. Pref. ...	88—93	...
31,035	Mch. 4	-/9⅜	-/9⅜	Associated Utilities 4 p.c. Pref.	15/—17/-	...
100,000	Dec. 18	3½	3½	Do. 3½ p.c. Red. Deb. ...	90—95	...
17,000	Feb. 19	8	8	Bognor Orig. Ord. 'A' ...	102—112	...
62,210	,,	8	8	Do. New Add. 'A' ...	102—112	...
87,160	,,	7	7	Do. New 7 p.c. max. ...	95—105	...
37,440	Jan. 29	10	10	Cam. Univ. & Town 10 p.c. max.	145—155	...
125,970	,,	7	7	Do. 7 p.c. max.	105—115	...
39,025	,,	5	5	Do. 5 p.c. max.	80—90	...
96,410	Jan. 29	4½	4½	Cardiff 4½ p.c. Pref.	90—95	...
55,520	Feb. 19	6	6	Colchester 6 p.c. Pref. ...	95—100	...
90,550	Mch. 18	5	5	Do. 5 p.c. Deb. ...	98—103	...
150,000	Feb. 12	4	4	Croydon 4 p.c. Pref.	82—87	...
130,000	Dec. 27	4	4	Do. 4 p.c. Deb.	87—92	+2
65,000	Mch. 4	7½	6⅞	Eastbourne 'A' 5 p.c.	105—110	-2½
198,000	,,	6	5⅝	Do. 'B' 3½ p.c.	93—98	+¼
112,312	,,	5	5	Do. 5 p.c. Pref.	90—95	...
130,000	Dec. 18	5	5	Do. 5 p.c. Deb.	98—103	...
130,500	Feb. 19	7½	7½	Exeter New Ord. (£10) ...	12—14	...
24,000	Aug. 21	8½	8½	Gt. Yarmouth 8½ p.c. max. (£30)	15—20	...
59,400	,,	7½	7½	Do. 7½ p.c. max. (£30) ...	10—15	...
51,160	Dec. 11	5½	5½	Do. 5½ p.c. Deb.	102—107	...
152,600	Feb. 26	8	9	Guildford Cons.	110—120	...
54,055	,,	5	5	Do. 5 p.c. Pref.	90—95	...
68,250	Dec. 11	5	5	Do. 5 p.c. Deb.	90—95	...
156,600	Feb. 19	7	5	Hampton Court Cons. ...	75—85	...
86,046	June 19	‡4½	‡5	Holyh'd&N.W.G.&W.Cpn.Ord.	13/6—15/6	...
80,000	Feb. 12	4	4	Lea Bridge 4 p.c. Pref.	75—80	+7½
60,000	,,	6	6	Do. 6 p.c. Pref.	105—115	...
94,876	Dec. 18	4	4	Do. 4 p.c. Deb.	88—93	...
73,620	Mch. 18	8¾	8¾	Luton Cons. 'A'	115—125	...
107,960	Feb. 26	4	5½	Mid Kent Ord. (£10)	7½—8½	...
230,940	Feb. 5	10	10	Oxford & District Ord. ...	135—145	...
47,112	,,	5	5	Do. 5 p.c. Pref.	85—90	...
50,000	,,	6	6	Do. 6 p.c. Red. Pref. ...	100—105	...
126,193	Oct. 30	7½	7½	Peterborough Ord.	140—150	...
64,990	Mch. 18	7	7	Redditch Ord.	100—110	...
166,850	Feb. 19	8	8	Romford Ord.	108—118	...
60,000	,,	4	4	Do. 4 p.c. Pref.	85—90	...
44,000	Mch. 18	5	5	Do. 5 p.c. Deb.	97—102	...
25,570	Feb. 12	5½	5½	Rugby 5½ p.c. Pref.	95—105	...
25,000	,,	6	6	Do. 6 p.c. Red. Pref. ...	100—105	...
42,750	De. 11	5½	5½	Do. 5½ p.c. Deb.	103—108	...
110,950	Feb. 26	8	8	Ryde Ord.	100—110	...
270,086	Mch. 18	7	7	Slough Ord.	98—103	...
21,000	Dec. 11	5	5	Do. 5 p.c. Deb.	92—97	...
28,872	Nov. 6	5½	5½	S. Midland Gas Cpn. Ltd. Ord.	14/—16/-	...
28,866	Mch. 18	4½	4½	Do. 4½ p.c. Red. Cum. Pref.	14/—16/-	...
127,228	Feb. 19	5	7	Swindon Cons.	75—80	...
60,425	Dec. 18	5	5	Do. 5 p.c. Deb.	92—97	...
64,380	,,	5	5	Torquay & Paignton 5 p.c. Pref.	82—87	...
130,000	Feb. 12	5	5	Wakefield Ord	85—95	...
81,650	,,	5	5	Do. 5 p.c. max.	75—80	...
82,000	Jan. 29	6	6	Weymouth Ord.	82—87	...
273,626	Feb. 12	7	7	Wolverhampton Cons. Ord. ...	115—120	...
98,384	,,	6	6	Do. 6 p.c. Pref.	105—115	...
160,000	Dec. 18	5½	5½	Do. 5½ p.c. Red. Deb. ...	100—105	...
106,490	Mch. 18	5½	5½	Wrexham Ord	75—85	...
90,000	Dec. 18	5	5	York 5 p.c. Red. Deb.	95—100	...
133,640	Feb. 19	6	6	Yorktown (Cam.) 5 p.c. Cons.	82—87	...
120,000	,,	5	5	Do. 5 p.c. Pref.	85—90	...
35,000	Dec. 18	5½	5½	Do. 5½ p.c. Deb.	103—108	...

BRISTOL EXCHANGE

Issue. £	When ex-Dividend.	Dividends. Prev. Hf. Yr. % p.a.	Dividends. Last Hf. Yr. % p.a.	NAME.	Quotations May 3.	Rise or Fall on Week.
347,756	Feb. 12	5	6	Bath Cons.	105—107	...
1,667,250	Feb. 5	5	5	Bristol. 5 p.c. max.	105—107	...
120,420	Dec. 18	4	4	Do. 1st 4 p.c. Deb. ...	98—101	...
415,250	,,	4	4	Do. 2nd 4 p.c. Deb.	98—101	...
328,790	,,	5	5	Do. 5 p.c. Deb.	115—117	...
274,000	Feb. 26	5	5	Newport (Mon.) Ord.... ...	91—94	...
13,200	Mch. 26	7	8⅝	Pontyp'l Gas & W. 10 p.c. 'A'	11½—12½	...
13,600	,,	5	6	Do. 7 p.c. 'B'	10—11	...
40,000	,,	5	6	Do. 7 p.c. 'C'	10—11	...
140,778	Feb. 12	5	5	Weston-super-Mare Cons. ...	92—96	...
64,338	Dec. 27	4	4	Do. 4 p.c. Deb.	90—95	...
33,340	,,	7½	7½	Do. 7½ p.c. Deb.	140—150	...

LIVERPOOL EXCHANGE

Issue. £	When ex-Dividend.	Dividends. Prev. Hf. Yr. % p.a.	Dividends. Last Hf. Yr. % p.a.	NAME.	Quotations May 3.	Rise or Fall on Week.
157,150	Feb. 5	5	6½	Chester 5 p.c. Ord.	98—101	...
92,500	Dec. 18	4	4	Do. 4 p.c. Pref.	80—84	...
36,430	,,	3½	3½	Do. 3½ p.c. Deb.	85—88	...
41,890	,,	4	4	Do. 4 p.c. Red. Deb. ...	95—99	...
2,167,410	Feb. 19	6	6	Liverpool 5 p.c. Ord.	108—110	...
245,500	Dec. 18	5	5	Do. 5 p.c. Red Pref. ...	99½—102½	+3½
306,083	July 17	4	4	Do. 4 p.c. Deb.	99—101	...
106,280	Feb. 5	10	8	Preston 'A' 10 p.c.	165—175	...
188,219	,,	7	7	Do. 'B' 7 p.c.	123½—133½	...

NEWCASTLE EXCHANGE

Issue. £	When ex-Dividend.	Dividends. Prev. Hf. Yr. % p.a.	Dividends. Last Hf. Yr. % p.a.	NAME.	Quotations May 3.	Rise or Fall on Week.
122,577	Feb. 19	7	7	Blyth 5 p.c. Ord.	113—118	...
732,000	Feb. 19	4	4	Hartlepool G. & W. Cn. & New	65—67	...
2,430,267	Feb. 5	5	5 7/10	Newcastle & Gateshead Con.	20/—20/6a	-/3
682,856	,,	4	4	Do. 4 p.c. Pref.	92—94	...
776,706	Dec. 27	3½	3½	Do. 3½ p.c. Deb.	84—86	...
277,285	April 24	5	5	Do. 5 p.c. Deb. '43 ...	100—102	-2
332,351	Feb. 5	6	6	Sunderland 6 p.c. max. ...	111—113	...

NOTTINGHAM EXCHANGE

Issue. £	When ex-Dividend.	Dividends. Prev. Hf. Yr. % p.a.	Dividends. Last Hf. Yr. % p.a.	NAME.	Quotations May 3.	Rise or Fall on Week.
542,270	Feb. 12	6	9	Derby Con.	103—108	...
55,000	Dec. 18	4	4	Do. 4 p.c. Deb.	98—103	...
20,000	Dec. 18	5	5	Long Eaton 5 p.c. Pref. ...	9—11	...
80,000	,,	5	5	Do. 5 p.c. Deb. ...	100—105	...

SHEFFIELD EXCHANGE

Issue. £	When ex-Dividend.	Dividends. Prev. Hf. Yr. % p.a.	Dividends. Last Hf. Yr. % p.a.	NAME.	Quotations May 3.	Rise or Fall on Week.
10,000	Feb. 19	10	10	Great Grimsby 'A' Ord. ...	170—180	...
6,500	,,	10	10	Do. 'B' Ord. ...	170—180	...
79,000	,,	10	10	Do. 'C' Ord. ...	160—170	...
1,806,339	Feb. 26	6½	6½	Sheffield Cons.	125—127	...
95,000	Jan. 2	4	4	Do. 4 p.c. Deb.	98—100	...

a The quotation is per £1 of Stock.
* Ex. div. ‡ For year.

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